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COUNTRY USSR

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SUBJECT Soviet Machine-Tool Products and other Industrial Machinery Offered for Export

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Attachment No. 1 - Soviet Export, No 2, 1957, an English-language advertising quarterly review published by VNESHTORGIZDAT. The journal is UNCLASSIFIED when detached from this report.

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Attachment No. 2 - Five brochures giving specifications on Soviet rotary, steam, and screw pumps and a pneumatic concrete breaker. The brochures are UNCLASSIFIED when separated from this report.

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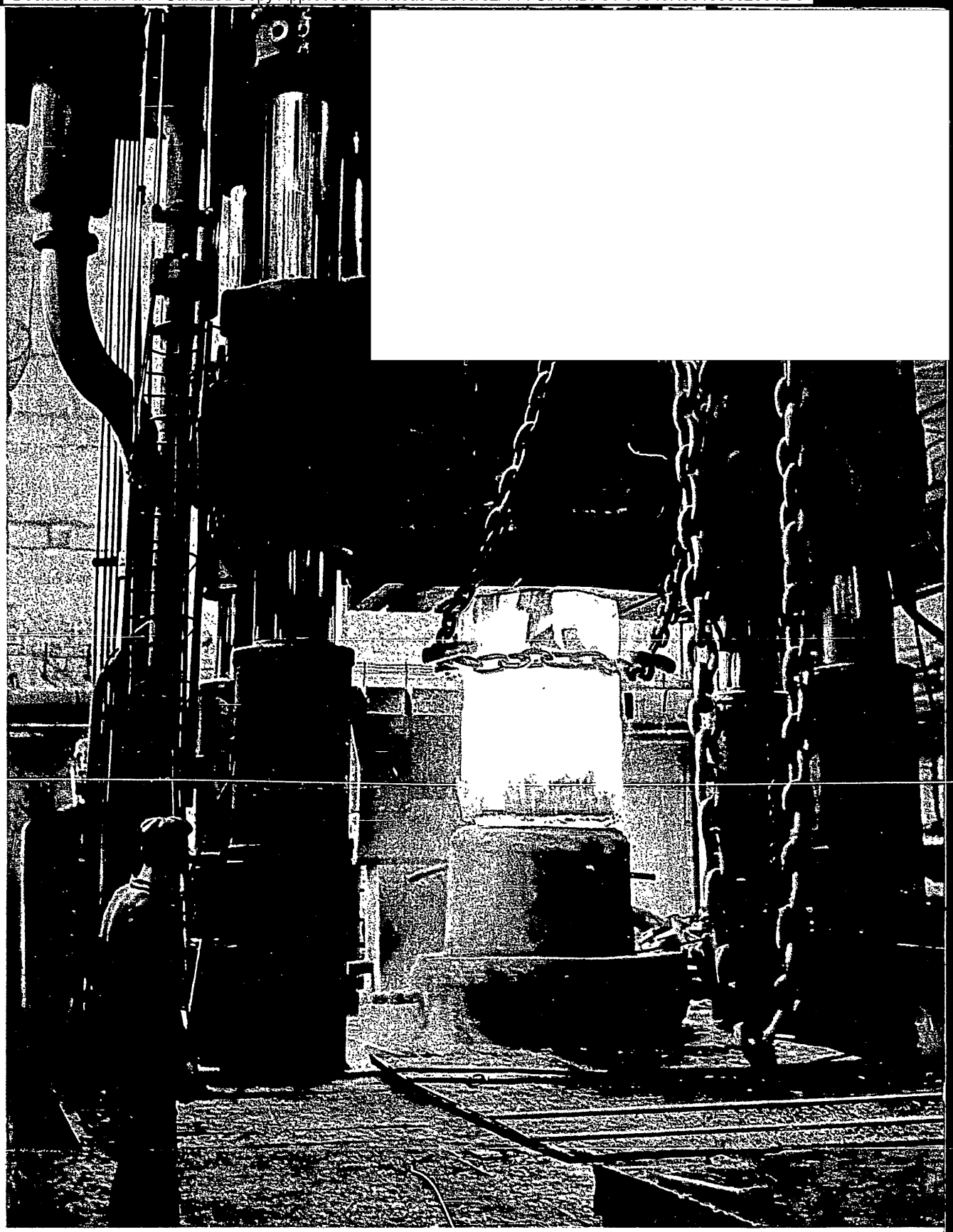

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Soviet Export

No. 2. 1957

A QUARTERLY ADVERTISING REVIEW PUBLISHED BY THE ALL-UNION PUBLISHING AND PRINTING CORPORATION "VNESHTORGIZDAT"

CONTENTS

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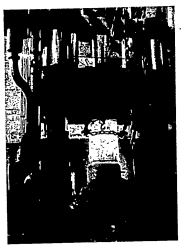


THE FRONT COVER

A powerful forging press at the Novo-Kramatorsk Machine-Building Plant working a 50 ton roller for a rolling mill.

See our next issue for details on Soviet presses.

IN OUR NEXT ISSUE

Soviet Exports since the Great October Socialist Revolution — by M. R. Kuzmin, Deputy Minister of Foreign Trade.

Ten Years of Fruitful Cooperation — by N. I. Melnikov, President, V/O "Technoexport".

The USSR — Participant in International Fairs and Exhibitions — by I. G. Bolshakov, Deputy Minister of Foreign Trade.

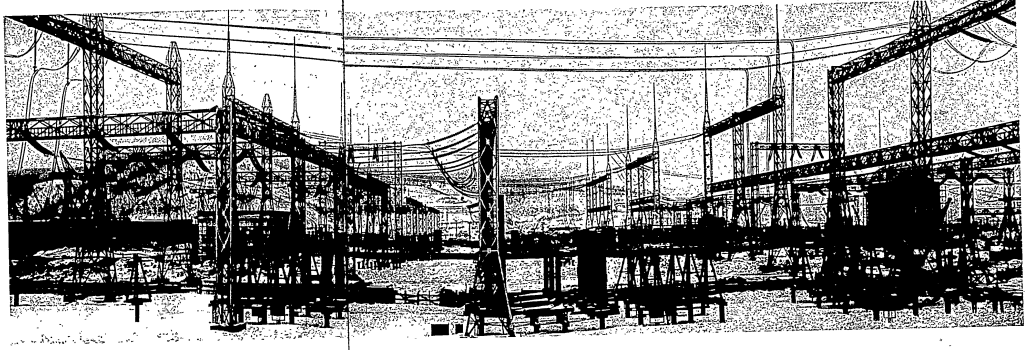
High-tension equipment for power stations and substations

Power engineering and the supply of Soviet power systems with first-class equipment is a matter of great importance, constant care and attention in the Soviet Union. The power stations and substations of the Soviet Union are provided with most modern equipment enabling them to occupy one of the first places in the world as regards economical and engineering performance. A great number of research institutes and manufacturing plants are designing and developing new, ever more perfect and economical electrical equipment.

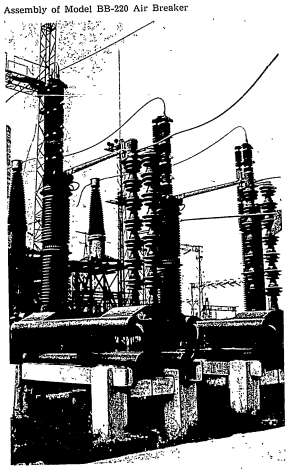
The Soviet electrical industry not only provides the required power and electrical equipment for the power stations and substations newly erected in the country, but also manufactures such equipment for export.

High-tension equipment for power stations and substations occupies a prominent place in this country's export of electrical equipment.

Many power plants in the People's Republic of China, the Korean People's Democratic Republic, the People's Republic of Poland successfully utilize high-tension equipment manufactured in the Soviet Union. Some of the largest hydro-electric stations in Asia, such as the Sup-



Assembly of Model BB-220 Air Breaker



ung station in the Korean People's Democratic Republic and the Feng-man station in the People's Republic of China, are equipped with modern air circuit breakers of Soviet make. Modern high-tension equipment manufactured in the Soviet Union was used to make up the switchgear of the powerful steam power plant Tavosz No. 2 in the People's Republic of Poland. Soviet high-tension apparatuses have found wide application in the Mongolian People's Republic, the Bulgarian People's Republic, Rumanian People's Republic and in the Democratic Republic of Vietnam.

Foreign trade enterprises in India, Burma, Egypt and some countries of the Near and Middle East are interested in purchasing high-tension equipment in the Soviet Union.

Soviet plants manufacture a wide range of high-tension equipment for power stations and substations and are able to comply with the most extensive demands and requirements. In accordance with State Standards, which are obligatory for all manufacturing plants in the Soviet Union, high-tension equipment is manufactured for operation within the following voltage range: 3, 6, 10, (15), (20), 35, (66), 110, 154, 220 and 400 kV. Circuit breakers along the entire range are manufactured for outdoor and indoor installation, for tension within the 15 to 400 kV range air circuit breakers with a disruptive capacity of from 2,000 to 15,000 mva are available.

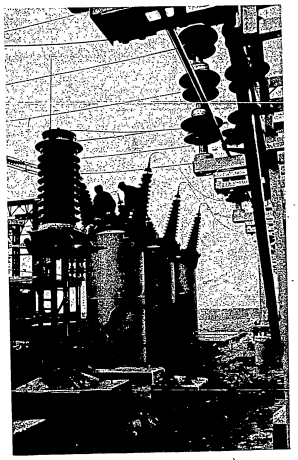
In comparison with other existing types, all those breakers incorporate a series of basic improvements in design. Their design combines maximum simplicity with rapid action and high disruptive capacity. 400 kV air circuit breakers are installed and operate reliably on the Kuibyshev–Moscow electric transmission line.

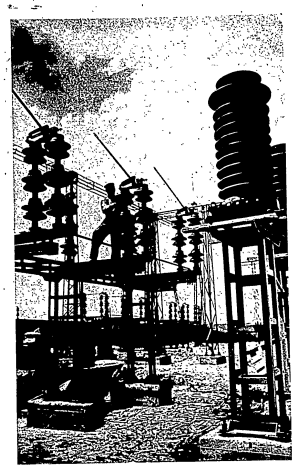
Oil circuit breakers are available in two models-large volume and small volume (pot-type) for voltages of from 3 to 220 kV.

Specifications of Circuit Breakers Manufactured in the Soviet Union

Type of Circuit Breaker	Design	Rated tension, kV	Rated current, a	Breaking capacity, mva	Maximum current, kA	Type of operating gear	Net weight, kg
ВМБ-10	Single-Tank Oil Breaker	3;6;10	200; 400 600; 1000	100	10;9;7 5;3	Manual type **ПРА-10** or electromagnetic type **ПС-10**	Complete with oil 150—175
ВМГ-133	Oil Pot-Type Breaker	3;6;10	600; 1000	100, 200 300	20	Manual type **ПРБА** or electromagnetic type **ПС-10**	Complete with oil 175, 200 210
МГГ-10	Small Volume Oil Breaker	6;10	2000; 3000	300; 500	29	Electromagnetic type **ПЭ-2**	Complete with oil 600, 620
МГГ-20	Small Volume Oil Breaker	20	2000; 3000	2500	72	Electromagnetic type **ПС-31**	Complete with oil 2350
МГГ-229м	Ditto	10	4000; 5000	1500	90	Electromagnetic type **ПС-30**	Complete with oil 3005
ВМД-35	Three-Tank Oil Breaker	20;35	600	330; 400	6,6	Electromagnetic type **ШПС-10**	Complete with oil 1235
МКП-35	Ditto	20;33	600; 1000	570; 1000	16,5	Electromagnetic type **ПЭ-2**	Complete with oil 3400
МГ-35	Small Volume Oil Breaker	35	600	400	6,6	Electromagnetic type **ШПС-20**	Complete with oil 910
ВВН-35	Air Breaker	35	600	1000	16,5		1200

Assembly of Model МК П-110 Breaker





Assembly of Model PJIH-110 Disconnecting Switch

Type of circuit breaker	Design	Rated tension, kV	Rated current, a	Breaking capacity, MVA	Maximum breaking current, kA	Type of operating gear	Net weight, kg
МКП-110	Three-Tank Oil Breaker	110	600	3500	18.4	Electromagnetic type ШПЭ-33	Complete with oil 18339
МГ-110	Small Volume Oil Breaker	110	600	2500	13.2	Electromagnetic	Complete with oil 3700
ВВН-110	Air Breaker	110	600; 800	2500 4000	13.2		5900
ВВН-154	Air Breaker	154	600	4000	11.3		9100
МКП-220	Three-Tank Oil Breaker				9.3	Electromagnetic type ШПЭ-42	
ВВ-220	Air Breaker	220	1000	5000	10		18000
ВВ-400	Air Breaker	400	2000	15000	21.6		9100

The Soviet elecritcal industry delivers various types of disconnecting switches: for indoor and outdoor service with various rated tension and current; single-pole and three-pole; with either vertical or horizontal knife position; operated by means of either an operating rod, a hand wheel, lever or worm manual devices or a remote controlled motor drive; with or without an earthing knife.

There are now available for export disconnecting switches, mainly of the knife-type, with the knives rotating in the insulator axis plane.

Disconnecting switches for indoor installation are manufactured for a 6000a rated current and a rated voltage of from 3 to 35 kV, while disconnecting switches for outdoor service are good for operation within a rated voltage range of from 3 to 400 kV and rated current ranging from 200 to 2000a. Disconnecting switches for outdoor installations rated 35 kV and more are provided with an ice breaking device, the ice breaking taking place before the knife leaves the fixed contacts.

Foreign purchasers may also be offered a wide range of measuring current and potential transformers meeting the highest requirements.

0.5 to 20 kV current transformers of the following designs for indoor service are available for export: oil-type; single and multiturn of the through type; bus-bar and supporting types. Outdoor current transformers rated 35 kV and higher of the following support types are also available for export: 35 kV transformers manufactured with two cores in the 0.5, 1 and D classes of accuracy (the latter for differential protection); 110 kV two-core and three-core transformers in the 0.5, 1 and D classes of accuracy; 154 kV transformers for differential protection service with three cores; also four-core 220 kV and 400 kV transformers for differential protection.

The industry offers for export lightning arresters (from 3 to 110 kV) of the tubular and (3 to 400 kV) valve types for protection of line insulation as well as station and substation insulation against atmospheric and commutation overvoltages.

The valve-type arresters rated within the 3 to 60 kV range are designed to protect insulation of electric installations forming part of systems with a grounded neutral; arresters rated 110 kV are designed to protect electrical installations in systems with either an insulated or grounded neutral, while valve-type arresters rated 154 and 220 kV serve to protect insulation in systems with a grounded neutral.

The electrical industry of the Soviet Union manufactures all required auxiliary electrical equipment for power station and substation switchgear and for transmission lines with a voltage of from 3 to 400 kV.

In order to cut down erection and mounting time the Soviet manufacturing plants construct ironclad switchgear consisting of metal-case enclosed cells fitted with built-in high-tension apparatuses, measuring instruments and secondary commutation devices. Such distributing switchgear (KPY) is shipped from the works fully assembled and properly tested. The only thing left for the Purchaser to do is to arrange the switchgear cells in required order, connect the generator and transformer cables as well as line cables, provide and auxiliary direct current supply service, and the switchgear may be put into operation.

The distributing switchgear (KPY) is built for indoor and outdoor service and voltages within the range of from 3 to 10 kV with a circuit arrangement as specified by the Purchaser.

The monopoly contractor of high-tension electrical equipment in the Soviet Union is Vsesojuznoje Objedinenije "Machinoexport", 32/34, Smolenskaja-Sennaja, Moscow.

Tractors

The Soviet industry will supply in the years 1956-1960 the agriculture, building and wood industries as well as many other branches of our national economy with 1.650.000 tractors. It is difficult to imagine such an enormous amount of tractors if not taking into consideration the vast size of our country and the wide application of tractors in the Soviet Union. Agriculture in our country is highly mechanized: the working of the soil, sowing and harvesting operations are almost fully carried out with the aid of various machines. The tractor is quite important for building purposes, melioration and irrigation that are extensively carried out in our country.

The various fields of application and the soil-climatic conditions as well as other natural conditions have brought to life a wide range of tractors—from a small garden-orchard all-purpose wheel tractor to powerful crawler models working the vast massives of virgin land. The wide range of tractors produced by our industry makes it possible to choose the most suitable, efficient and cheap model necessary for the varying operations and conditions.

Tractors produced today by our agricultural machine-building plants keep in pace with the latest requirements of agrotechnics. They are all equipped with highly efficient Diesel engines with a power take-off shaft. The improved hydraulic system of the tractor permits to use it with various mounted implements and machines. The wheel models have a variable track permitting to use the tractor for working cultivated crops with a varying width of interrows. Most of the tractors are equipped with speed reducers making it possible to operate the tractor effectively with seedling planters.

This article is a brief review followed with specifications of the main tractor models produced in the Soviet Union.

The DT-14 tractors are effectively operated with various mounted implements working on orchards, plantations of technical crops, etc. The photograph illustrates the DT-14 tractor with a mounted sower

The construction of a highly efficient and all-purpose tractor, model DT-14, solves the problem of supplying agriculture with a machine capable to cope with various agricultural, transportation and auxiliary operations. The photograph shows the assembly of tractors on the line of the Vladimir Plant

TRACTOR DT-14

The problem of constructing an all-purpose small power agricultural tractor with a high economical effect has long engaged the joint efforts of numerous scientists, engineers and specialists in agriculture. Today, when this tractor is manufactured on the serial production schedule, there is every assurance to state that this work was well worth while. Agriculture is now supplied with a highly efficient and really all-purpose tractor, the DT-14 model.

The DT-14 tractor is designed to operate with mounted and trailed machines and implements on gardens, technical crop plantations and orchards. It can also be used for transportation and various auxilary operations.

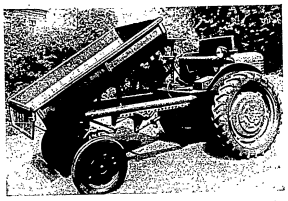
Among the many machines and implements which can be effectively used with this tractor are plough and cultivator, drill and mower, seedling planter and sprayer, load lifting boom and platform to transport loads, etc.

The principal features of the tractor are:

1. Variable track width from 1100 to 1500 mm (by 50 mm) permitting it to operate in interrows.
2. The possibility to change the tractor set-up for a high orchard modification with a 250 mm road clearance enabling the tractor to ride over low-stalk cultivated crops, and a low garden modification with a 313 mm road clearance to ride under tree crowns.
3. Reverse on the four main gears.
4. An additional reduction gear on the straight forward movement making it possible to operate seedling planters at a speed of 0.71 km per hr.
5. A hydraulic lifter to control the mounted machines and implements.

TOOL CARRIER DCIII-14

The model DCIII-14 tool carrier is of great advantage when operating with such complex mounted implements



The DCШ-14 tool carrier is widely used for transportation operations as well as with complex mounted implements. This tool carrier, which is equipped with a dumping platform, is distinguished from tractors of some other design for its high speed and passability.

The model DT-24 tractor is now available in two modifications: with a road clearance of 525 or 900 mm. The photograph illustrates the model DT-24-3 with a high road clearance. This model is effectively used for working technical crops, mainly cotton

as the cultivator-fertilizer, vegetable seed sower or fertilizer drill, sprayer, potato digger and others.

The tool carrier is a tractor of a frame construction, the engine and the transmission being installed in the rear while the front part is free and designed for mounting various agricultural machines and implements.

The carrier is so designed as to give an excellent view of the cultivated interrows and working parts and enable the driver to perform such complicated operations as, for instance, vegetable seed sowing with the simultaneous drilling of fertilizers.

The tool carrier can also be used to transport various loads. In this case a dumping platform is mounted on the frame.

Mounted machines and implements as well as the dumping platform are controlled by means of the hydraulic mechanism with two remote hydraulic cylinders. All the carrier mechanisms are driven from a 14 h. p. Diesel engine. The tool carrier is equipped with a "live" power take-off shaft of permanent speed—533 r. p. m. and three synchronous shafts whose speed is proportionate to the speed of the carrier.

The tool carrier track is regulated within a wide range—from 1200 to 1800 mm. The 560 mm road clearance makes it possible to cultivate crops in various stages of growth.

TRACTOR DT-24

The model DT-24 tractor is a 24 h. p. all-purpose wheel tractor with an economical Diesel engine. It is designed for various operations with mounted and trailed machines and implements used in agriculture and on building sites. Its maximum 19 km/hr forward speed permits it to be employed for transport purposes. Still another advantage is the driving belt which allows the tractor to be used under stationary conditions for driving various installations not equipped with engines.

All the mounted and semi-mounted machines and implements are controlled by the tractor driver by means of a hydraulic mechanism and extending hydraulic cylinders. A power take-off shaft with a dependent or independent drive is provided to operate mounted units, while a lateral power take-off shaft with a dependent drive is installed to drive the seeding apparatuses of drills.

The model DT-24 tractor is now available in two main modifications: DT-24-2 and DT-24-3.

The model DT-24-2 tractor is designed mainly to work low-stalk cultivated crops. It has a road clearance of 525 mm and a variable track of 1250—1750 mm.

The plough, cultivator, harrow, drill, scraper, pit digger, wood planter—are only some of the machines and implements that can be mounted on this all-purpose tractor.

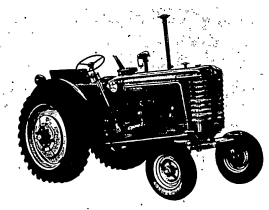
The model DT-24-3 with a 900 mm road clearance and a 1800, 2000 or 2400 mm track is intended for interrow cultivation of high-stalk crops, particularly cotton.

A cultivator for cotton, sprayer-duster, cotton boll picker, cotton harvester and other machines can be mounted on the model DT-24-3 tractor.

TRACTOR "BYELARUS"

"Byelarus" is one of the best models of modern all-purpose wheel tractors. Equipped with an economical and reliable 40 h. p. Diesel engine and an improved hydraulic system for controlling multi-section mounted and trailed machines and implements, the "Byelarus" tractor is extensively used in agriculture, in transporting various loads and driving stationary installations

The tractor track can be changed within the range of 1200—1800 mm (by 100 mm) depending upon the width of the cultivated crop interrows.



The tractor MT3-5 "Byelarus", one of the best models of modern all-purpose wheel tractors, is equipped with an economical and reliable 40 h. p. Diesel engine and improved hydraulic system

This tractor is extensively used for ploughing with a five-bottom plough, as well as for transporting heavy loads. It is also employed at building sites, and for loading or dumping operations.

The DT-54 tractor is distinguished for its high passability, manoeuvrability and simple control. It can operate in deep mud and pass fords due to the good packing in the running gear.

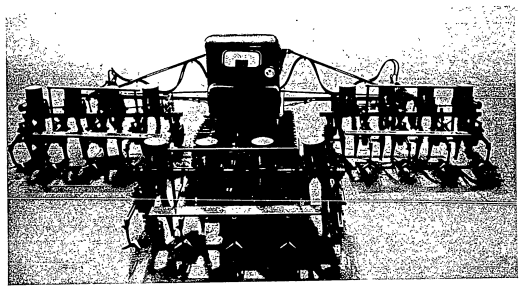
The powerful and efficient Diesel engine provides for high output with a relatively low fuel consumption.

The tractor is of a frame construction that facilitates assembling and dismantling operations as well as the replacing of separate parts or units.

An improved separate-unit hydraulic system, comprising an oil pump, distributor, portioner and remote cylinders, is provided to control mounted and semi-mounted implements and machines.

TRACTOR DT-55

This is the so-called "swamp" modification of the model DT-54 tractor. It is designed for working in swampy or drained land and is also widely used on peat



CRAWLER TRACTOR-CULTIVATOR DT-38

Compared with other crawler tractors, this model is of small power (38 h. p.) which permits its use under full load under various operating conditions. This model is designed for mechanizing agricultural operations in the pre-sowing treatment of the soil, planting, interrow cultivation of cultivated crops and many other operations with trailed and mounted machines and implements.

The 610 mm road clearance, 1340 mm track and 200 mm wide crawler provide necessary tractor passing in interrows 45, 60, 65 and 70 mm wide with sufficient protective zones.

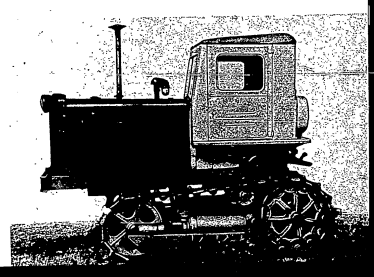
The tractor driver controls the mounted and semi-mounted implements by means of a hydraulic system with remote double-action hydraulic cylinders.

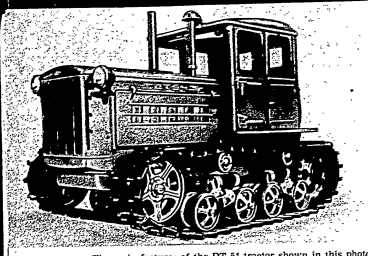
A power take-off shaft and a pulley are provided on the tractor to drive machines and implements not equipped with engines as well as for driving stationary installations.

TRACTOR DT-54

The model DT-54 powerful crawler tractor has become quite popular due to its efficiency, manoeuvrability, easy operation with implements, and convenient maintenance.

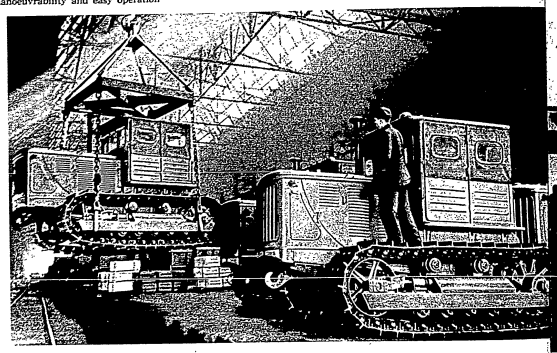
The DT-38 tractor of the crawler range produced by the Soviet industry is of relatively small power (38 h. p.) which permits its efficient usage under various operating conditions.
The tractor is used with various mounted implements by means of the hydraulic system and double action remote cylinders. In the photographs you see (top) the DT-38 tractor with a cultivator-fertilizer, (bottom) general view of the tractor



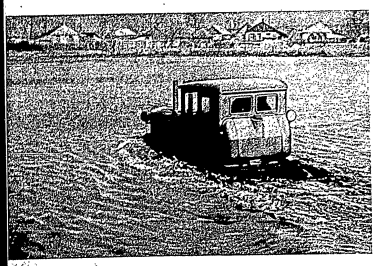


The main features of the DT-54 tractor shown in this photograph are its efficiency, manoeuvrability and easy operation

The powerful all-purpose crawler tractor, model C-80, designed for heavy operations in agriculture, road building and for transporting purposes, are long and deservedly popular in agriculture. The photograph illustrates the shipping of ready made C-80 tractors from the Chelyabinsk Tractor Plant



The DT-54 tractor is distinguished for its high passability. It can operate in deep mud, water, etc. due to the good packing in the running gear. The photograph shows the DT-54 tractor passing a ford



fields. The DT- 55 tractor operates with various trailed and mounted agricultural and peat processing machines and implements: swamp ploughs, cutters, disc harrows, mounted field-swamp shrub cutters, stump pullers, cutter-drums.

TRACTOR DT-57

This tractor, designed on the basis of the model DT-54, is used for operation on mountain slopes with a gradient up to 20° and as high as 2000 m above sea level. It is also used for afforestation near ravines.

The "shuttle" method of driving is used when operating on steep slopes. The tractor moves forward and backward at the same speed and without turning, the implements being mounted in the front and in the rear. To change the direction of movement the tractor driver has only to move to the opposite seat.

TRACTOR C-80

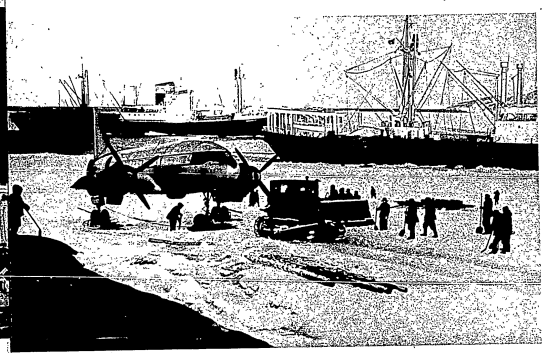
The model C-80 powerful all-purpose crawler tractor is designed for heavy operations in agriculture, for transporting purposes, in road building and in the wood, oil and mining industries as well as in many other fields.

In agriculture the C-80 tractor is used to plough with two five-bottom ploughs, to sow grain crops with five 28-row sowers, and for harvesting with two combines. When employed for building purposes the tractor can be used to drive a bulldozer, scraper, shrub cutter, pipelayer and other mechanisms.

Thanks to its wide range of speeds and traction forces, the model C-80 tractor possesses excellent manoeuvrability.

SKIDDING TRACTORS

The skidding tractor is a powerful aid in mechanizing laborious operations in the woods. These tractors are designed to skid the wood from the felling area to woodworking places, and for transporting purposes. With a mounted snowplough or bulldozer the tractor is used to clear roads of snow and for various ground operations on roads in the woods.



The C-80 tractors due to the high features of the design are used for a wide range of operations under various climatic conditions. On the photograph you see the C-80 tractor trailing an aeroplane of the Soviet expedition in the Antarctic. The other photograph illustrates a team of C-80 tractors hauling a powerful dredger building a canal in one of the South regions of our country

Two types of skidding tractors are manufactured today: models TDT-40 and TDT-60.

The TDT-40 tractor is equipped with a special loading mechanism which consists of a loading shield and a winch with a steel rope. The tractor loading arrangement provides for transporting 6 cu. m of untrimmed logs per trip. The crawler run (340 mm wide crawler link and 1480 mm track) provides good mobility and excellent passability.

The TDT-40 tractor is of a frame construction equipped with a 40 h. p. Diesel engine.

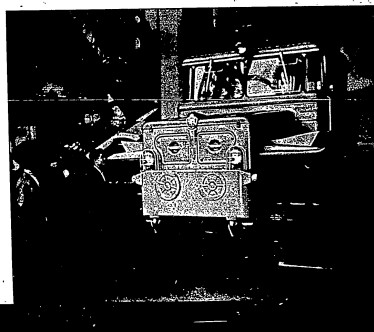
The TDT-60 tractor differs from the TDT-40 model by its more powerful, 60 h. p., engine, a hydraulic drive for dumping the loading shield, and a rest to pull the ready pack onto the shield. The tractor can transport from 8 to 9 cu. m of timber per trip, and when hauling logs by the tops it can haul up to 14 cu. m.

The model TDT-60 tractor is distinguished for its especially high passability due to the powerful engine and the well designed resting surface.

The skidding tractor can be equipped with a power take-off shaft to drive various installations not furnished with engines.

Specifications of the main tractor models follow.

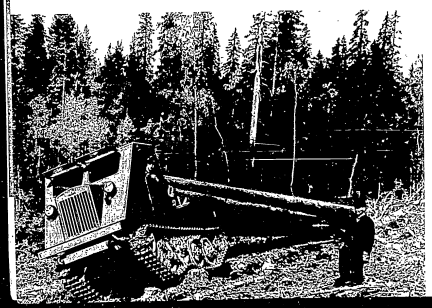
Soviet tractor designers have constructed the first models of a superpowerful DET-250 tractor (250 h. p.). This model is not yet produced for export. The photograph shows the DET-250 tractor at the USSR Industrial Exhibition



Tractor Specifications

Model	Engine	Speeds	Fuel, specific consumption	Engine starting	Driver and track	Clearance	Special equipment	Modification
1. Wheel tractors								
DT-14	Diesel, 4-cycle, single-cylinder, Ne=14 h. p. N=1600 r. p. m.	5 forward, 4 reverse	Diesel, not over 220 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Variable track from 1100 to 1500 mm	320 or 313 mm	Reduction gear, driving pulley, power take-off shaft, hydraulic system	Orchard, 326 mm, clearance. Garden, 313 mm clearance
DCIII-14	Diesel, 4-cycle, single-cylinder, Ne=14 h. p. N=1620 r. p. m.	5 main forward (1 reduction), 1 reverse	Diesel, not over 210 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Track — 1200, 1295, 1500 and 1800 mm	500 mm	"Live" power take-off shaft, reduction gear, hydraulic system	
DT-24	Diesel, 4-cycle, 2-cylinder, Ne=24 h. p. N=1400 r. p. m.	5 forward, 2 reverse	Diesel, not over 215 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Variable track from 1259 to 1759 mm, 1800, 2000 a. 2400 mm	525 mm 300 mm	Power take-off shaft, 535 r. p. m. Driving pulley, speed reducer, hydraulic system	For low-stalk crops DT-24-3 For high-stalk crops DT-24-3
"Byelarus" MTZ-5	Diesel, 4-cycle, 4-cylinder, Ne=40 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 200 g/e. h. p. hr	10 h. p. starting engine	Rubber wheels, rear wheels of low pressure. Variable track from 1200 to 1800 mm	510 mm (under axle shaft, sleeves of final transmissions)	Power take-off shaft, driving pulley, speed reducer, hydraulic system with 3 remote cylinders	
2. Crawler tractors								
DT-38	Diesel, 4-cycle, 4-cylinder, Ne=38 h. p. N=1400 r. p. m.	5 forward, 1 reverse	Diesel, not over 200 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=300 mm. Track=1340 mm	410 mm	Power take-off shaft, 545 r. p. m. hydraulic system	
DT-54	Diesel, 4-cycle, 4-cylinder, Ne=54 h. p. N=1300 r. p. m.	3 forward, 1 reverse	Diesel, not over 220 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=320 mm. Track=1435 mm	360 mm	Power take-off shaft, hydraulic system	Swamp, model DT-55 Steep slope DT-57
C-80	Diesel, 4-cycle, 4-cylinder, Ne=80 h. p. N=1900 r. p. m.	5 forward, 4 reverse	Diesel, not over 205 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=500 mm. Track=1880 mm	360 mm	Power take-off shaft	
TDT-40	Diesel, 4-cycle, 4-cylinder, Ne=60 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 210 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=340 mm. Track=1480 mm	540 mm	Winch, power take-off shaft, warming device	
TDT-60	Diesel, 4-cycle, 4-cylinder, Ne=60 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 220 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=400 mm. Track=1910 mm	550 mm	Power take-off shaft, warming device, winch, hydraulic cylinder	

Exporter: V/O "Avtoexport", 32/34, Smolenskaja-Sennaja, Moscow G-200.



The skidding tractor is a powerful aid in mechanizing laborious operations in the woods. Soviet plants produce skidding tractors in two modifications — TDT-40 and TDT-60 with 40 and 60 h. p. engines respectively. The photograph illustrates the TDT tractor skidding timber

Hoisting Equipment

Tractor Specifications

Model	Engine	Speeds	Fuel, specific consumption	Engine starting	Driver and track	Clearance	Special equipment	Modification
1. Wheel tractors								
DT-14	Diesel, 4-cycle, single-cylinder, Ne=14 h. p. N=1600 r. p. m.	5 forward, 4 reverse	Diesel, not over 220 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Variable track from 1150 to 1500 mm	320 or 313 mm	Reduction gear, driving pulley, power take-off shaft, hydraulic system	Orchard, 320 mm, clearance. Garden, 313 mm clearance
DCШ-14	Diesel, 4-cycle, single-cylinder, Ne=14 h. p. N=1600 r. p. m.	5 main forward (1 reduction), 1 reverse	Diesel, not over 210 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Track — 1250, 1350, 1500 and 1800 mm	560 mm	"Live" power take-off shaft, reduction gear, hydraulic system	
DT-24	Diesel, 4-cycle, 2-cylinder, Ne=24 h. p. N=1400 r. p. m.	5 forward, 2 reverse	Diesel, not over 215 g/e. h. p. hr	Electric starter or hand starting	Rubber wheels, rear wheels of low pressure. Variable track from 1250 to 1750 mm, 1800, 2000 a. 2400 mm	525 mm 900 mm	Power take-off shaft, 535 r. p. m. Driving pulley, speed reducer, hydraulic system	For low-stalk crops DT-24-3 For high-stalk crops DT-24-3
"Bystarus" MT3-5	Diesel, 4-cycle, 4-cylinder, Ne=48 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 209 g/e. h. p. hr	10 h. p. starting engine	Rubber wheels, rear wheels of low pressure. Variable track from 1200 to 1800 mm	640 mm (under axle shaft sleeves of final transmissions)	Power take-off shaft, driving pulley, speed reducer, hydraulic system with 3 remote cylinders	
2. Crawler tractors								
DT-20	Diesel, 4-cycle, 4-cylinder, Ne=28 h. p. N=1400 r. p. m.	5 forward, 1 reverse	Diesel, not over 205 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=300 mm. Track=1340 mm	410 mm	Power take-off shaft, 540 r. p. m., hydraulic system	
DT-54	Diesel, 4-cycle, 4-cylinder, Ne=54 h. p. N=1200 r. p. m.	3 forward, 1 reverse	Diesel, not over 230 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=390 mm Track=1435 mm	360 mm	Power take-off shaft, hydraulic system	Swamp, model DT-54 Steep slope DT-57
C-80	Diesel, 4-cycle, 4-cylinder, Ne=80 h. p. N=1000 r. p. m.	5 forward, 4 reverse	Diesel, not over 235 g/e. h. p. hr	19 h. p. starting engine	Crawler, link width=390 mm. Track=1680 mm	360 mm	Power take-off shaft	
TDT-40	Diesel, 4-cycle, 4-cylinder, Ne=40 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 210 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=340 mm. Track=1480 mm	340 mm	Winch, power take-off shaft, warming device	
TDT-60	Diesel, 4-cycle, 4-cylinder, Ne=60 h. p. N=1500 r. p. m.	5 forward, 1 reverse	Diesel, not over 205 g/e. h. p. hr	10 h. p. starting engine	Crawler, link width=400 mm. Track=1510 mm	390 mm	Power take-off shaft, warming device, winch, hydraulic cylinder	

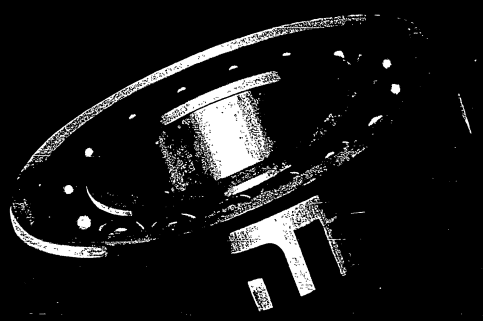
Exporter: V/O "Avtoexport", 32/34, Smolenskaja-Sennaja, Moscow G-200.

The skidding tractor is a powerful aid in mechanizing laborious operations in the woods. Soviet plants produce skidding tractors in two modifications — TDT-40 and TDT-60 with 40 and 60 h. p. engines respectively. The photograph illustrates the TDT tractor skidding timber

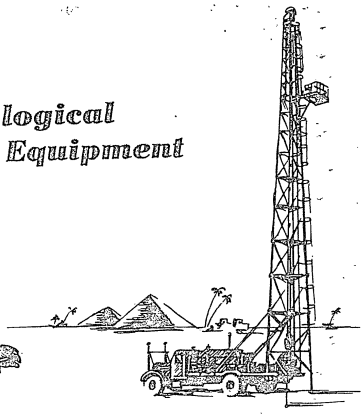
VSESOJUZNOJE OBJEDINENIJE

MACHINOEXPORT

Hoisting Equipment



Soviet Geological Surveying Equipment



Modern industry uses minerals on a vast and ever increasing scale. This intensive process demands a higher quality and accelerated rate of geological research now going on throughout the world. Recent scientifc and engineering achievements, including the latest developments in the field of atomic energy, are at the disposal of geology.

Soviet geologists apply with success the various special equipment built in the USSR. Geophysical methods are being widely used in geological survey. They permit to detect structures in adverse geological conditions not accessible to usual exploration methods. Besides, they make it possible sharply to speed up the rate of exploration work as well as to cut down drilling operations in prospecting.

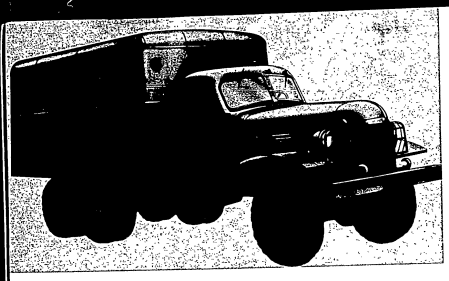
The seismic reflected wave method is one of the main in geological exploration and preparation of oil and gas-bearing structures for deep prospecting drilling. Seismical surveying instruments and equipment are designed to record the passage of seismic waves generated in the earth's crust and in this manner to obtain the necessary information on the geological constitution of the site investigated. Seismic methods are used to determine the location of strata and the depth of the layers explored, as well as to select the optimal dislocation of primary wells. Seismic waves are created by firing explosives in shot holes at a depth of from 10 to 30 m below the surface. These waves are registered by seismographs located in various points at distances of from 5 to 200 m from each other, and from 5 to 20,000 m from the blast point. Seismic survey registers waves at a depth of from 2000 to 6000 m.

Under the impact of seismic waves the seismographs begin to oscillate, and an alternating electromotive force is generated in them. It is transmitted by cables to the entrance of the amplifiers at the seismic stations. There the electrical oscillations are amplified, filtered and transmitted to an oscillograph to be recorded on special (oscillograph) photo paper. Each seismograph has a special galvanometer registering its oscillations. All seismograph readings, representing the mechanical energy of the earth's crust vibrations transformed into electrical energy, are recorded on a single oscillograph paper tape.

The entire set of instruments and equipment giving a common seismic record is termed "seismic channel". This includes a seismograph, an amplifier, and a galvanometer. The sensibility of such a seismic channel is rather high, and allows the recording of earth's crust vibrations with amplitudes as small as 0,00001 mm.

A most modern type of seismic surveying station is the Model PSS-60 unit simultaneously recording the readings of sixty seismograph sets. It is fitted with a special drawer-type oscillograph with built-in midget galvanometers. The seismic station is equipped with mixers and amplification controllers, both automatic and with the amplification factor increasing in a preset proportion.

The PSS-60 seismic station is portable and designed for field work. It ensures high stability in various cli-



Model PSS-60 Seismic Station mounted in a closed body on a Type ZIL-151 lorry. The high cross-country capacity of the truck permits using this station in various field conditions

matic conditions. Its instruments are mounted in a closed body on ZIL-151 heavy service lorry chassis.

Shot holes necessary for shooting in seismic exploration work are drilled by self-propelled, truck- or tractor-mounted portable drilling rigs. Such holes are usually from 10 or 30 up to 200 and more metres in depth.

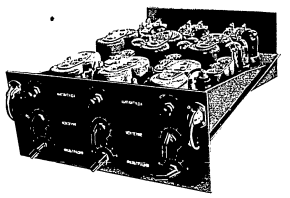
Model AVB-3-100 drilling rigs mounted on a ZIL-150 lorry chassis are widely used for well drilling in geological surveying. These rigs can also be used for structural drilling up to a depth of 100 m.

All rig mechanisms, including the engine and mast, are transportable on the lorry chassis without dismantling and require a minimum of time for rigging up. Excellent manoeuvrability in off-the-road conditions, high drilling rates reliable control and simple design make the AVB-3-100 drilling rig an indispensable implement in field surveying work.

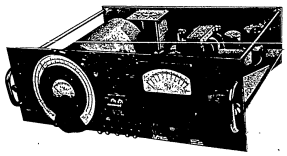
Electrical logging is also widely used in geophysical exploration. The principle used here is based on the varying electrical resistance offered by different formations in the course of test hole drilling.

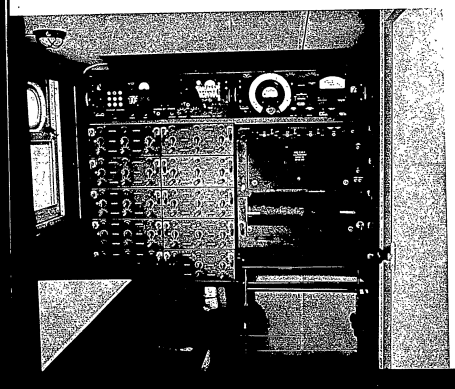
The electrical logging requires measuring at regular depth intervals the resistance offered by the formations to electric currents passing through them.

Electrical logging helps to determine the location of oil or gas deposits, to distinguish them from aquiferous layers and to establish, with only a few wells, the geological structure of the entire area.



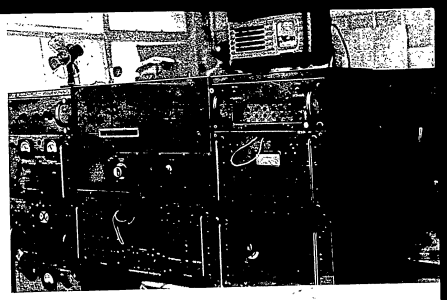
Model U5-60M Amplifier, used for amplifying seismic waves and for selecting their frequency. The amplifier has six different frequency characteristics two of which are used for recording retracted waves, and four — for reflected waves





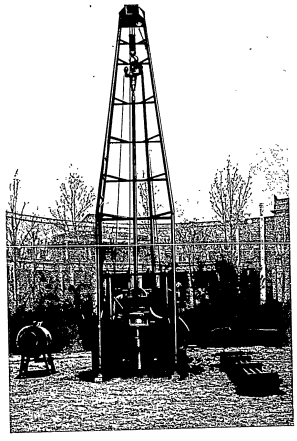
Model KP-1-60M Control Panel of the 60-Channel Seismic Station, permitting to deliver to the amplifier entrance alternative currents with a frequency varying from 6 to 500 Hertz as well as currents obtained from a single-point seismic wave receiver, also to test the receiver lines and operation of the receivers on a contour, to supply D. C. impulses to the amplifier entrances, and to locate defects in main wires

Model PSS-60 Apparatus group for seismic stations, providing 60 recording channels with a seismic wave receiver, an amplifier and a galvanometer in each.



Laboratory control panel of Model AKC Electric Logging Station. The instrument connections of this unit are designed for operation with three-conductor cables and include a current-conducting and an instrument circuit. The entire set of measuring instruments is installed in a closed body mounted on a Model GAZ-63 heavy-duty lorry chassis

Model AVB-3-100 Drilling Rigs mounted on a Type ZIL-150 lorry chassis are widely used for drilling seismic wells. This rig can also be applied for structural drilling to a maximum depth of 100 metres. The photo shows a Model AVB-3-100 m Portable Drilling Rig



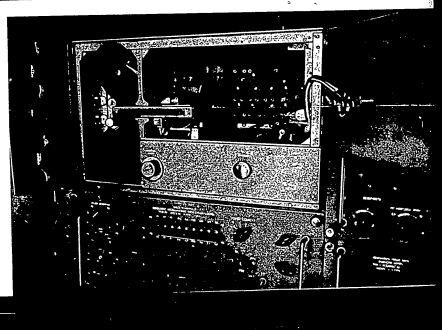
Electrical exploration sharply increases the rate of production well drilling, permitting to drill such wells without taking rock cores. Electrical methods also permit to measure the well curvature, to determine the cement level in cementing operations, locate water infiltration points, to open productive formations by shooting. These methods lead to increased oil output and efficient use of oil fields.

Special stations used for electrical logging are equipped with instruments for all operations mentioned above, and with additional instruments indicating the temperature along the well shaft and the specific resistance of the fluid at various depth. Other instruments permit to perforate casing pipes, to take rock samples with a shooting core barrel, and to shoot the wells.

Soviet industry is prepared to deliver complete electrical logging stations. The AKC station includes all the necessary up-to-date equipment. It consists of a complete laboratory installed in a closed truck body on a GAZ-51 or GAZ-63 automobile chassis, and a hoist mounted in a closed body of a ZIL-151 lorry. An electrical surveying cable of from 2 to 4 km long supplied with the hoist unit.

The AKC station can be provided with the necessary apparatus for radioactive logging permitting to obtain an exact picture of the strata even in wells reinforced by casing pipes, since radioactive properties of minerals can be detected through metal walls. This makes it possible to investigate wells drilled long ago, in which rock layers located above the productive level were not fully determined earlier. This is of special importance in choosing secondary production methods in upper strata. Information obtained with the help of radioactive logging

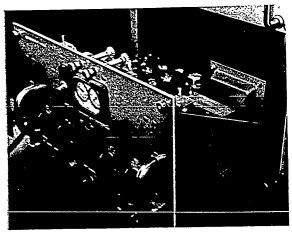
Photo-recorder of the logging station oscillograph, used for registering of potential difference change curves. It permits recording in depth scales of 1 : 1000, 1 : 500, 1 : 200, 1 : 100, 1 : 50, or 1 : 20, as desired The Photo-recorder has a scale for visual observation of the valves being recorded, and signal lamps enabling to watch the operation of auxiliary circuits and the diagram band



Model NGGK Well Unit, suitable for operation with either three-conductor or single-conductor armoured logging cables of any type. The unit may be used in wells at temperatures up to + 100° C and pressures up to 400 kg per sq. cm. The Well Unit requires 200 to 220 mA of direct current to be supplied by the rectifier of a Model AKC Electrical Logging Station

is highly exact, because the radioactivity of bodies does not change with temperature or pressure.

Radioactive logging is used in two alternate forms, known as gamma and neutron-gamma methods. The NGGK-55 unit included in the AKS station is a set consisting of a neutron source, a lead screen, a gamma-



Model NGGK-55 Control Panel, designed for simultaneous automatic recording of gamma- and neutron-gamma well-logging. The equipment of this panel is used in combination with the Model AKC Automatic Logging Station

radiation indicator registering the action of neutrons upon the surrounding medium (for neutron-gamma methods), a set of electrical equipment including a high-voltage generator feeding the indicator and, finally, spontaneous gamma radiation indicator placed at a distance eliminating any influence of the neutron source (for gamma methods).

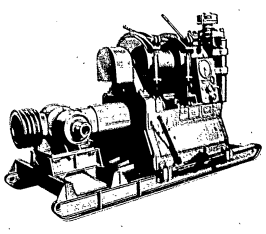
A light sectional set of equipment for radioactive investigation, bearing the model designation "PAPK" is used in remote and impassable regions. This unit ensures separate gamma and neutron-gamma logging in test holes as well as in injection and production wells up to 2000 m deep. The equipment is packed in two cases for easy handling and transportation.

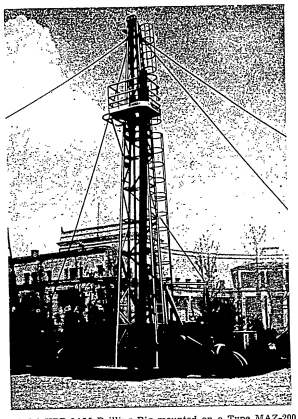
Core drilling rigs are built by Soviet machine building plants for prospecting methods using rock samples. The ZIF-300, ZIF-650A and ZIF-1200A drilling rigs are provided with a hydraulic feed system which ensures control of the bit pressure and applies precisely and conveniently the required tool feed by means of a system of control valves. The hydraulic feed control system also allows the reading of the axial load on a special pressure gauge. Thus, the high-speed rig model ZIF-300 is specially designed for rotary drilling of test holes up to 300 m deep and inclined at from 0 to 15 degrees to the perpendicular. Any type of abrasive material or bit can be used for drilling.

The rig design provides for forced drilling rates, due to the wide range of tool speeds, high speed of load handling operations, and precise control of the bit pressure. Spindle speeds of 102, 182, 237 and 480 r. p. m are available. The draw works has a load capacity of 2000 kg. The well starting size is 131 mm, the core diameter at maximum depth of drilling equals 52 mm. Drill rod sizes of 42 and 50 mm are used. The rig assembly comprises a number of individual units forming a single system of mechanisms. Such an arrangement is most convenient for rigging up as well as for tearing down and moving to a new location. The rig can be shifted on its frame to clear the well in order to facilitate spinning. A special hand-operated mechanism is provided for this purpose in the rig bed. The rig can be furnished engine-driven (with a gear reducer), or electrically-driven, as desired. About 28 to 38 h. p. are required for its drive. A hydraulic control system ensures the tool feed, spindle raising, bit pressure control, and jacking in case of emergency. It comprises an oil tank, a hydraulic control unit, hydraulic feed cylinder at the swivelhead, a double-action vane pump, and the necessary valves.

Another rig model, the ZIF-650A, is used for drilling wells up to 650 m deep, while a third model—ZIF-1200 A permits drilling to a depth of 1,200 m. Both are similar

Model ZIF-1200A Drilling Rig, used for drilling of prospect holes up to 1200 m deep





Model URB-3AM Drilling Rig mounted on a Type MAZ-200 heavy lorry chassis. Its application field is core drilling to a depth of 300 m and drilling of water wells up to 300 m deep

in design to the ZIF-300 rig described above. All of them are furnished with a set of drilling and fishing tools, casing and drill pipes and a number of accessories permitting to obtain high drilling rates.

Models SBU-150-ZIF and URB-3AM Portable Drilling Rigs are also widely used for core drilling. The first is a self-propelled unit mounted on a ZIL-151 lorry chassis and used for core drilling to a depth of 150 m.

The Model URB-3AM drilling rig is applied for drilling test holes up to 300 m deep. It can be also used for drilling water wells up to 300 m deep, with the help of 2—7/8" drill pipes. This unit is mounted on a MAZ-200 lorry chassis.

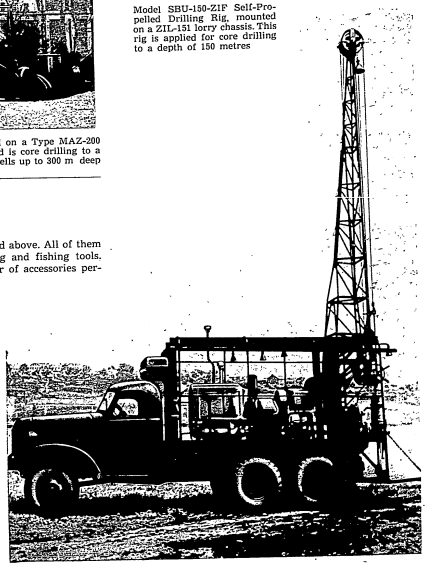
Drilling bits of the OKV, TP-3 and CCB types, reinforced with cemented carbides, are widely used for drilling in hard rock. These bits are manufactured in a number of sizes ranging from 46 to 151 mm. Their use permits to do away with expensive diamond bits and substantially cut down the drilling costs per metre of well depth.

Soviet-made geological surveying equipment is being increasingly exported abroad. A large consignment of ZIF-300, URB-3AM and SBU-150-ZIF was shipped in 1956 by the USSR export organization "Machinoexport" to the Ministry of Mineral Resources of India. Soviet geological surveying equipment is also being purchased by a number of companies in Argentina, Afghanistan, Lebanon, etc. Seismic and electrical logging equipment as well as SBU-150-ZIF and URB-3AM portable drilling rigs were recently shipped by "Machinoexport" to Egypt.

The geological surveying equipment mentioned above is furnished with a full set of accessories and spare parts.

Experts may be sent on demand to supervise the rigging of equipment and the training of local personnel.

Model SBU-150-ZIF Self-Propelled Drilling Rig, mounted on a ZIL-151 lorry chassis. This rig is applied for core drilling to a depth of 150 metres



BUILDING MACHINES

The export programme of V/0 "Machinoexport" includes a large group of machines and mechanisms for the production of building materials. This equipment, embodying all the latest developments in building machinery is designed for the mechanization of all the basic processes in the entire complex of building operations.

The Model C-362 A Pneumatic Cement Unloader is of particular interest for builders. This machine provides for mechanization of the laborious process of unloading bulk cement from box cars and conveying it to the intake devices of railway store houses or into intermediate storage capacities.

The principle of unloading is very simple. When the self-propelled remote-controlled suction device drives into the car the rod breaker mounted on the device brings down the compressed cement onto two grabbing discs rotating in opposite directions. From these discs the cement is conveyed to the intake funnel. Under the vacuum developed in the unloader system by the water-seal vacuum pump the cement is sucked into the cement pipeline and conveyed to the settling chamber. Further from this chamber the cement is then delivered into the intake devices by means of a cantilever high speed delivery screw conveyor.

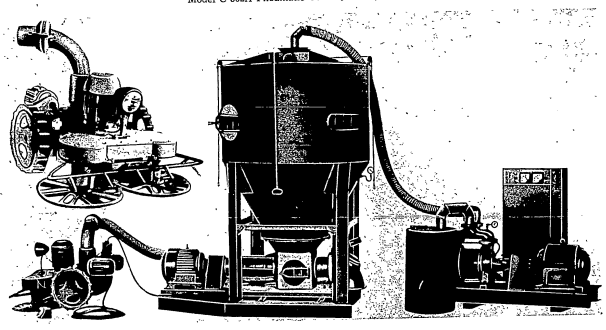
The cement delivery range is up to 15 m, the height of delivery — 5 m, air consumption — up to 3 cu. m per min, settling chamber filter fabric surface — 18 sq. m, total installed output — 54 kW, total weight — 4.18 t.

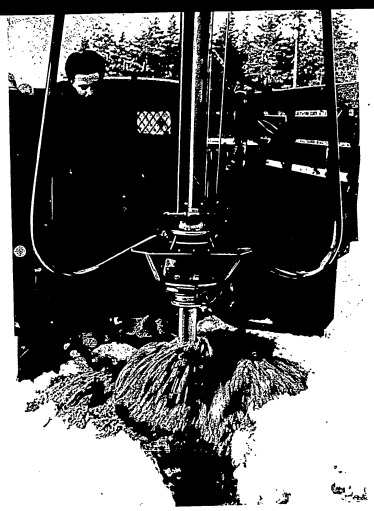
The unloader can operate without the self-propelled suction device. In such a case a hand-operated nozzle is put onto the flexible cement line.

The nozzle comprises a steel branch pipe with ribs protecting it from being pressed against the car floor.

The progressive method of conveying a mixture of air and cement with a large cement content through the flexible cement line is the most important facture of the Model C-362A unloader. The unit is very efficient. It can handle up to 40 tons of cement per hour. The pneumatic conveyor improves the sanitary conditions of work, as compared with other types of similar units, and prevents spraying and loss of cement.

Model C-362A Pneumatic Cement Unloader





Model BKM-1 Hydraulic Auger-Crane in operation

The new widely applied Model BKM-1 Hydraulic Auger-Crane is designed to drill holes for poles and individual foundations for telephone, telegraph and electric network overhead lines, and also for other similar works.

This unit is distinguished by its high efficiency, manoeuvrability, and reliability in operation. It is mounted on a cross-country type truck and consists of the following: a drill with pivoted flaps for holding earth when removed from the excavated hole; a drill head connected with the tilting mechanism; a tilting mechanism for changing the drill head working position in three dimensions, thus allowing to drill holes and installing poles on uneven ground; crane installation winches; a hydraulic system allowing to directly carry out reciprocal motion of the drill rod with the drill fastened on the shank. The blades and central bit are the main cutting tools of the auger.

This outfit is designed for drilling holes of 0.8 m diameter and 2 m depth in 3 to 5 stages within 5 or 6 minutes, while the crane can hoist and install poles 12 m long and weighing to 1000 kg, within 1 to 2½ minutes. The travelling speed of the outfit is 35 km/hr. The weight of the unit (including the weight of the truck) is 4,800 kg.

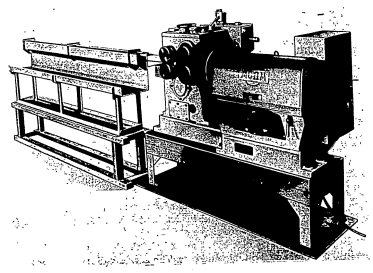
Modern construction methods for the production and assembly of reinforced concrete structures make it possible to mechanize all the operations.

A number of machines necessary for the complete equipment of reinforcement shops is manufactured by the Soviet industry. Thus, the Model C-338 Automatic Machine is designed for straightening and cutting reinforcing bars of a tensile strength up to 62 kg per sq. cm and 3 to 14 mm in diameter.

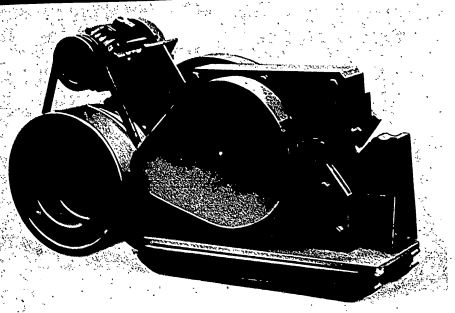
This machine of original design is widely used at construction sites and reinforcement shops of plants producing reinforced concrete articles.

The variant type meter provides for easy and rapid machine adjustment by means of a limb for cutting steel bars of the required length: 188 and 376 mm. When the meter is switched off the machine can cut bars from 500 to 8000 mm long.

Bar cutting is performed according to signals from



Model C-338 Automatic Machine for straightening and cutting reinforcing bars



Model C-370 Machine for cutting reinforcing bars

the pre-regulated meter for the required cutting length. Ready bars are automatically placed into the chute of the receiving device. The straightening rollers and cutters are driven by a 7 kW electric motor through the V-belt, worm and spur gear transmissions.

The reinforcement steel straightening rate is 33 m per min. The speed of the straightening drum is 1120 r.p.m. of the tension rollers — 80 r.p.m. and of the shear shafts — 92 r.p.m. Overall dimensions of the machine: lenght — 7680 mm, width — 880 mm, and height — 890 mm; weight — 920 kg.

The new highly efficient Model C-370 machine can easily cut reinforcing bars having the same tensile strength.

This machine is designed for cutting reinforcing bars of different sections: round, with a diameter of 40 mm; square, with a side of 36 mm and sheets with a cross section of 12.50 sq. cm. Metal cutting is carried out by the shears, one of which is fixed in the frame groove, while the other is fastened on the upper part of the swinging link.

The machine is simple in design and reliable in operation. Due to its small weight and overall dimensions, the outfit mounted on skids can be easily moved at the construction site.

Simple maintenance and low power consumption ensure great economy.

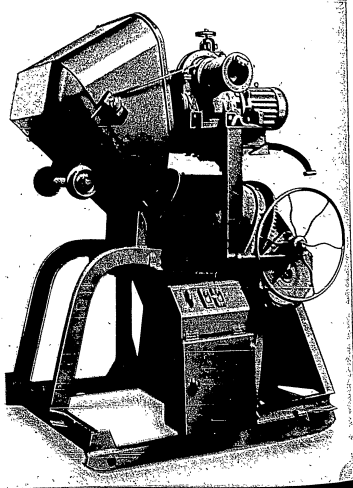
The maximum permissible force on the shears is 35 tons, the movable shear stroke is 45 mm, number of cuts per min is 18. The overall dimensions are: length — 1085 mm, width — 630 mm, height — 630 mm. Weight — 440 kg.

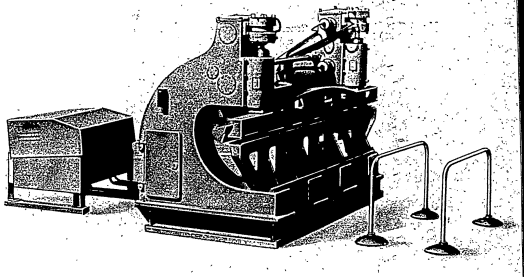
The Model C-146A Machine now in serial production is designed for bending reinforcing bars having a tensile strength up to 47 kg per sq. cm.

The machine bends reinforcing bars of various shapes: bars bent at different angles, end hooks, bent bars with hooks, stirrups of all kinds of shape etc. Reinforcing bars are bent on a bending disc by means of simple devices set in the sockets of the table and disc. The bending disc is rotated by a 2.8 kW electric motor through a V-belt, two pairs of spur gears and a worm reducing gear.

The Model C-146A Machine can operate on open-air sites. It is easy to handle and convenient in operation. The machine is engaged and controlled when working by means of reversible electric starting devices mounted on it.

Model C-399 Concrete Mixer of 250 litres capacity





Model CM-516 Machine with hydraulic drive for bending reinforcing mesh

Overall dimensions: length—780 mm, width—920 mm, height—720 mm; weight—460 kg.

The new Model C-394 and C-395 Machines are widely applied for bending thick reinforcing bars used for the construction of bridges, tunnels, large water works and other structures. The Model C-394 machine is designed for bending reinforcing bars from 40 to 70 mm in diameter, while the Model C-395 Machine is used for bending bars from 70 to 100 mm in diameter.

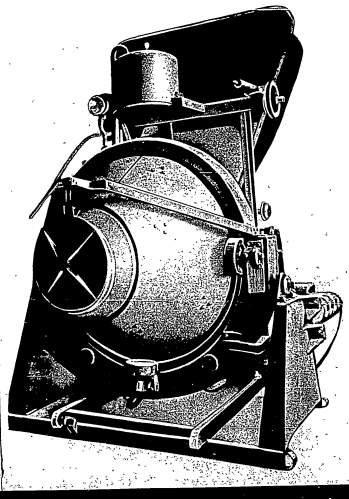
The Model CM-516 Machine with hydraulic drive is designed for bending reinforcing mesh. It is very efficiently used for bending frameworks of prepared mesh (having width of up to 3500 mm) made of 34 welded bars of up to 12 mm in diameter each.

The machine is employed in the reinforcement shop equipment set of plants producing reinforced concrete articles.

It takes only 67 seconds to bend large sized meshes made of 12 mm bars and weighing 150 kg; bending of smaller meshes made of 5 mm bars and weighing 10 kg takes 28 seconds.

Mean machine output is 100 bendings per hour. The machine has push button control. The weight of the machine is 5,000 kg. Overall dimensions: length — 1,700 mm, width — 3,610 mm, and height — 2,050 mm.

Model C-336 Concrete Mixer of 425 litres capacity



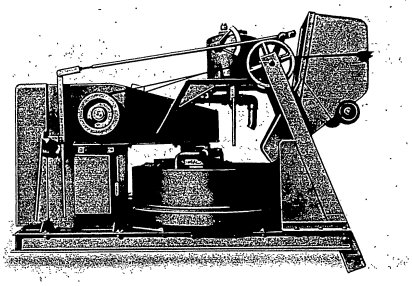
There is a great demand for the concrete mixers manufactured by Soviet Works.

New models of concrete mixers make it possible to produce concrete mixtures of high quality.

The Model C-399 and C-336 Batch Type Tilting Drum Concrete Mixers are designed for mixing concrete at stationary plants on the gravity principle. They are furnished with rotating and tilting mechanisms for the mixing drum, a device for hoisting and lowering the skip hoist charging bucket, a syphon water dosing tank and electric equipment. Easy operation and economy of means and materials are attained by push button control, of batching, mixing and discharging of concrete, as well as by automatic stopping of the mixing drum and charging bucket at end positions.

The mixing drum capacities of the Model C-399 and C-336 concrete mixers are 250 and 425 litres respectively; they discharge 5.4 and 8.5 cu. m per hour; drum speed is 17.4 and 18.2 r.p.m.; drum tilting time is 3 and 3.5 sec; bucket hoisting speed is 0.3 m per sec.

Model C-371 Forced-Action Concrete Mixer of 250 litres capacity



The Model C-399 Concrete Mixer is equipped with two electric motors having a total output of 3.8 kW, while the Model C-336 Concrete Mixer is furnished with three electric motors having a total output of 7.9 kW. The weight of the first model is 1350 kg, and that of the second one — 2050 kg.

The models C-371 and C-355 Forced-Action Concrete Mixers produce rigid concrete with aggregates of a size up to 30 mm. Their useful capacities are 250 and 500 litres respectively.

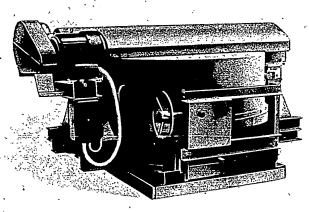
These concrete mixers consist of the mixing drum, paddles, discharging device, drive unit and frame. The model C-371 Concrete Mixer differs from the model C-355 in that the first has a skip hoist and water dosing tank. The paddles and mixing drum are driven by an electric motor through V-belt and gear transmissions. The concrete mixture is delivered by the discharging device through the control opening on the mixing drum bottom.

The discharging device of the C-355 Concrete Mixer is pneumatically controlled, while the Model C-371 Concrete Mixer is operated by hand.

Forced mixing of concrete component ensures the production of concrete of high quality and uniformity.

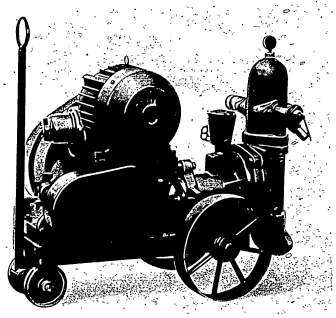
Rigid concrete manufactured with these mixers saves up from 20 to 30 per cent of cement, reduces manufacturing time and allows striking immediately after moulding is finished.

Mixing speeds of the model C-371 and C-355 Mixers are respectively 3.8 and 7.5 cu.m per hour; mixing drum speeds are 7.5 and 6.7 r.p.m.; paddle speeds are 34 and 31.4 r.p.m. Electric motor output is 4.5 and 10 kW. The

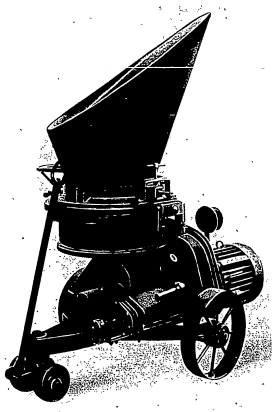


Model C-355 Forced-Action Concrete Mixer of 500 litres capacity

Model C-317 Mortar Pump



Model C-320 Cement Gun



weight of the first model is 2000 kg, and that of the second model is 4100 kg.

The Model C-320 Cement Gun is designed and successfully applied for placing concrete mortar on various surfaces of buildings and industrial structures, and is also used for repair works in places which are difficult of access. This cement gun is of original design and it can also be used as a sandblast device.

The cement gun can be rapidly and easily moved during operation because it is run on wheels.

A good coating of the surface with concrete of low watercement ratio is ensured by means of spraying.

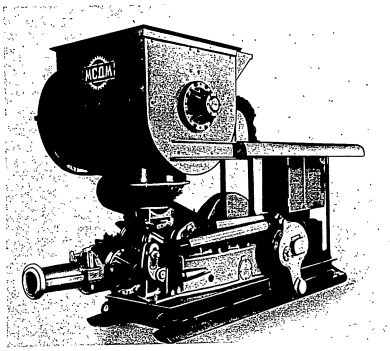
All the cement gun operating units are driven by an electric motor of 4.5 kW at 950 r.p.m. through worm and spur gear transmissions.

The cement gun delivery (according to the consumption of dry materials) is 1.5 cu. m per hour, average thickness of concrete coating with one stroke — up to 20 mm, dry mixture feeding range — up to 30 m, permissible aggregate size — up to 8 mm, working air pressure — up to 3.5 atm. Overall dimensions: length — 1500 mm, width — 1000 mm, height — 1550 mm; weight — 850 kg.

The models C-334, C-220A and C-289A Portable Mortar Mixers are designed for producing mortars, and also cement and lime mixtures when manufacturing blocks and other articles. They are widely used in the various fields of construction. Mortar aggregates are mixed in the drum of mortar mixers by paddles arranged as screws and fastened on the rotary shaft.

The mixing drum capacities of the above-mentioned mortar mixers are 80,150 and 325 litres respectively. The mortar mixers provide for 40 batches per hour.

Model C-284A Concrete Pump



The mechanization of mortar and concrete conveying to the building site is of great importance for all construction work. Experience in the use of motor and concrete pumps in various conditions has shown that these machines are of high efficiency for mortar and concrete conveying and for plastering. The field of application of these machines, especially mortar pumps, has greatly developed.

Besides mortar delivery the pumps are designed for pumping dense lime milk, forcing cement mortars into the voids formed in concrete, reinforced concrete and other structures.

The models C-251, C-263 and C-317 Mortar Pumps manufactured by Soviet works are designed for conveying various mortars, excepting quick-setting ones, through rubber hoses or steel pipes for plastering and masonry operations.

The pump capacities are 1.3 and 6 cu.m per hour. When pumps operate together with compressors they convey mortars and coat walls and ceilings by means of a nozzle set on the free end of the mortar line. Mortar delivery range: in horizontal direction — up to 200 m, in vertical direction — up to 40 m; maximum working pressure — up to 15 atm.

The design and operation principle of the models C-251 and C-263 Mortar Pumps are the same, differing only in the output of the electric motors, the plunger stroke value, and the number of plunger strokes per minute.

The C-317 Mortar Pump has a cylindrical diaphragm and receiving hopper and also a slightly different design of certain assemblies in comparison with the C-251 and C-263 Pumps which are furnished with a flat diaphragm.

Concrete pumps are designed for placing concrete mixtures in massives, blocks, foundations, tunnels and other engineering works. The models C-296 and C-284A Concrete Pumps convey freshly mixed concrete through the piping to the site. The pump capacities are 10 and 40 cu.m per hour respectively.

The concrete lines consist of separate sections of steel pipes, coupled by levers in one line. This line is connected to the pump delivery valve box.

Concrete pump delivery range: in horizontal direction — up to 250 m (model C-296) and 220 m (model C-284A), in vertical direction — up to 40 m (model C-296) and 15 m (model C-284A).

Total output of electric motors is 16.8 kW (model C-296) and 44.5 kW (model C-284A). Weight (without concrete line) is 3.2 and 11.9 tons respectively.

* * *

This is a short list of some building machines manufactured in series by Soviet works.

The machines described above are remarkable for their universal design and high quality.

The parts of machines and equipment contacting the treated materials are made of wear — proof steels.

The gear transmissions of the mechanisms are mostly enclosed in oil baths and the shafts are mounted on anti-friction bearings. The units and parts of most of the machines are standardized.

Each building machine is delivered complete with spare parts, replaceable parts, tools and technical documentation.

FINE CHEMICALS

AUTOMATIC INSPECTING and MEASURING MACHINES

Modern industry, with its gigantic scale of mass production, places ever increasing demand on the mechanization and automation of inspecting and measuring operations.

Automation of mass production inspection facilitates increasing labour productivity with a simultaneous attainment of high precision of control.

The Soviet Union instrument-making industry produces several series of checking and measuring machines and instruments designed for the complex inspection and control of the quality of production. Notwithstanding the variety of measuring principles employed: electrocontact, electroinduction, pneumoelectric and mechanical principles, all the types of measuring instruments manufactured in the Soviet Union are distinguished for their high accuracy of measurement combined with high capacity.

This article will give the reader an idea of a few of the series of automatic checking and measuring machines which have successfully proved their worth in the Soviet Union ball-bearing and automotive industries.

MEASURING MACHINES FOR INSPECTING PISTON RINGS

Model TF 14-3 Automatic Piston Ring Tension Inspecting and Sorting Machine (Fig. 1). This machine automatically sorts piston rings according to their tension, ranging from 08 to 12 kg, into three groups: "Standard tension", "Below standard tension" and "Above standard tension". The tension of the piston rings is measured by compressing the rings between two blades, one of which is stationary and adjustable, and the other — pivoted. The tension is measured with an accuracy of 100 to 200 grams.

Model TF 14-4 Automatic Uncut Piston Ring Height Measuring and Sorting Machine (Fig. 2). This machine automatically sorts piston rings from 2.5 mm to 6.5 mm in height into three groups: "Standard height", "Height undersize" and "Height oversize". Measuring is accomplished with the aid of three movable tips located around the circumference of the rings and at an angle of 120° to each other. Accuracy of measurement — ± 0.02 mm.

Model TF 14-5 Automatic Piston Ring Radial Thickness Measuring Machine (Fig. 3). This machine automatically sorts piston rings with radial wall thickness up to 6.5 mm into 3 groups: "Standard thickness", "Thickness oversize" and "Thickness undersize".

Fig. 1. Model TF 14-3 Automatic Piston Ring Tension Inspecting and Sorting Machine

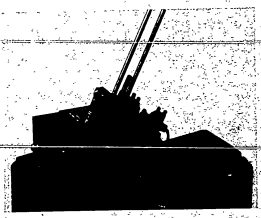


Fig. 2. Measuring Device and Control Piston of the Model TF 14-4 Automatic Piston Ring Height Measuring Machine

Fig. 3. Measuring Device and Control Panel of the Model TF 14-5 Automatic Piston Ring Radial Thickness Measuring Machine

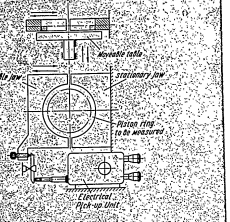


Fig. 4. Ring Gap Measuring Scheme

Fig. 5. Model 4AK Automatic Cylindrical Roller Diameter Checking Machine

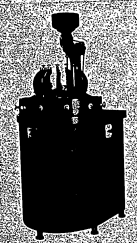


Fig. 6. Model 4AKL Automatic Cylindrical Roller Length Checking Machine

Radial wall thickness is measured when compressing the piston ring to its nominal diameter with the aid of three floating feelers suspended by flat springs. Accuracy — ± 0.02 mm.

Model TF 14-9 Automatic Piston Ring Straight Gap Measuring Machine. This machine automatically sorts piston rings into three groups: "Standard gap", "Gap oversize" and "Gap undersize". The piston ring gap is measured by compressing the ring between a stationary and a movable jaw, (Fig. 4) possessing a circular recess, the diameter of which is equal to that of the working diameter of the piston ring. Accuracy of measurement — ± 0.04 mm.

The above-mentioned automatic checking and measuring machines can be successfully employed for inspecting piston compression and oil catching rings of outside diameter ranging from 67.5 to 127.0 mm.

The design of the automatic machines of the TF 14 series meets all demands of modern instrument production; they ensure convenient operation, high production, high accuracy and long life.

These automatic machines are hopper-loaded and their operation cycle is fully automatic. The rings are sorted onto special sword-shaped holders.

The measuring tips and all surfaces liable to greatest wear due to contact with the measured work are hard-alloy tipped. The extreme limits of the movable tips are set with the aid of minimum and maximum master gauges.

The position of the measuring tips if fixed by an electrical pick-up unit connected to the circuit of an electronic relay with controls the electromagnets of the sorting device.

These automatic machines are equipped with interlocking devices which automatically disconect the electric motor from the supply line in the event of any interruption in the piston ring feeding, causing a red emergency lamp to light up the control panel of the machine.

The capacity of these machines is from 1,800 to 2,000 pistons rings per hour.

Checking and Measuring Machines used in the Production of Ball and Roller Bearings. The automation of the inspection operation is of particular importance for the mass production of ball and roller bearings, entailing extremely high demands for accuracy of dimensions of the finished components.

Our industry has designed and employs on a large scale a great range of highly efficient automatic inspection machines for ball and roller bearing production. It will be impossible to discuss every type in such a short review, and we will mention only a few of the more perfect and most frequently used machines.

ROLLER BEARING AUTOMATIC CHECKING MACHINES

The Model 4AK and 4AKB (Fig. 5) Automatic Checking Machines are designed for inspecting and sorting cylindrical rollers into 8—9 diameter groups, including 6—7 groups "correct size", one "oversize" and one "undersize" groups.

The Model 4AK Automatic Checking Machine is designed for inspecting and sorting rollers ranging from 3 to 12 mm in diameter and from 6 to 15 mm in length, into 8 groups. Capacity — 4,000 rollers per hour.

The Model 4AKB Automatic Checking Machine is larger than the Model 4AK Machine, and designed for inspecting and sorting rollers ranging from 10 to 25 mm in diameter and from 12 to 36 mm in length, into 9 groups with an accuracy of 0.003 mm at a rate of 2,000 rollers per hour.

The Model 4AKL and Model 4AKBL (Fig. 6) Automatic Checking Machines are designed on the base of the Model 4AK Machines for inspecting and sorting cylindrical rollers into 4 length groups, including 2 "correct size" groups, one "oversize" and one "undersize" group.

The Model 4AKL Automatic Checking Machine is designed for measuring rollers from 3 to 12 mm in diameter and from 6 to 15 mm in length at a rate of 4,000 rollers per hour.

The Model 4AKBL Automatic Checking Machine is designed for inspecting and sorting rollers from 10 to 25 mm in diameter and from 12 to 28 mm in length at a rate of 2,000 rollers per hour; the accuracy of the machines is 0.008 mm.

The Model 16AK and 16AKB Automatic Checking Machines (Fig. 7) are designed for inspecting and sorting needle rollers into 7 diameter groups, including 5 groups "correct size", one "oversize" and one "undersize" group.

The Model 16AK Automatic Checking Machine is designed for measuring rollers from 1.6 to 8 mm in diameter and from 6 to 30 mm in length; the Model 16AKB — for measuring rollers from 3 to 10 mm in diameter and from 20 to 60 mm in length.

These machines operate with an accuracy of 0.003 mm at a rate of 3000 rollers per hour.

In the above-mentioned automatic machines, the rollers are measured and sorted with the aid of a group of mechanical pick-up units (snap-gauge type) each of which is set for a definite dimension corresponding to the diameter or length of the roller to be measured.

In these machines, the rollers are passing consecutively under each of the pick-up unit until the size of the roller coincides with the dimensions to which the respective pick-up unit has been set, thereby tripping the pick-up unit, which in its turn releases the mechanism opening a slide, after which the measured roller falls into a corresponding box.

A number of automatic machines are used for inspecting and sorting taper rollers. Among these, the following should be mentioned:

The Model 6AK (Fig. 8) and the Model 6AKB Automatic Cheking and Sorting Machines, designed for inspecting and sorting taper rollers into 12 diameter groups including 10 groups "correct size", one "oversize" and one "undersize" group. These machines operate on a mechanical principle of measuring.

The roller diameter is measured automatically with an accuracy of 0.004 mm with the aid of two straight edges (Fig. 9) inclined at an angle to each other to form a wedge-shaped gauge.

The Model 6AK Automatic Checking and Sorting Machine is designed for inspecting and sorting rollers from 4 to 16 mm in diameter and from 8 to 34 mm in length at a rate of 1,800 rollers per hour; the Model 6AKB Automatic Machine — for inspecting and sorting rollers from 15 to 22 mm in diameter and from 19 to 34 mm in length at a rate of 1,200 rollers per hour.

The Model MSR-2 and the Model ASR-3 (Fig. 10) Automatic Checking and Sorting Machines belong to the category of the most perfect multi-dimension automatic measuring machines operating on a combined electric-contact measuring principe. They are designed for sorting taper rollers according to their diameter and taper.

These machines automatically measure and sort taper rollers into 32 groups with an accuracy of 0.002 mm, including 30 acceptable groups (consisting of 3 taper groups subdivided into 10 length groups) and one "oversize" group and one "undersize" group.

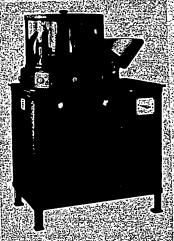


Fig. 7. Model 16AK Automatic Needle Roller Diameter Checking Machine

Fig. 8. Model 6AK Automatic Taper Roller Diameter Checking Machine

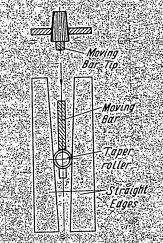


Fig. 9. Taper Roller Diameter Measuring Scheme of Model 6AK and Model 6AKB Automatic Machines

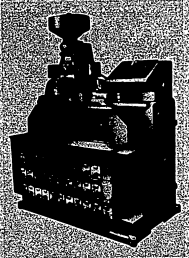


Fig. 10. Model ACP-35 Automatic Taper Roller Diameter Checking and Sorting Machine

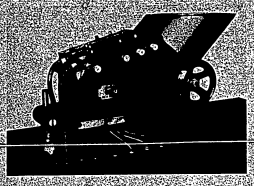


Fig. 11. Model ASH-8 Automatic Bearing Ball Diameter Checking and Sorting Machine

Fig. 12. ASH-8 Automatic Machine gauging Bars

The capacity of the Model MSR-2 Machine is 1,200 rollers per hour. The capacity of the Model ASR-3, is twice as higher than that of the Model MRS-2 Machine, reaches a maximum of 3,500 rollers per hour.

The original measuring principle employed in these automatic machines ensures a high stability and precision when employed for measuring taper rollers from 10 to 22 mm in diameter and length up to 46 mm, with a taper from 1°30' to 4°.

AUTOMATIC BEARING BALL CHECKING MACHINES

The Model ASH-8 Automatic Bearing Ball Checking Machine (Fig. 11) is designed for inspecting and sorting bearing balls from 3 mm to 8 mm in diameter to an accuracy of 0.002 mm.

This automatic machine is hopper-loaded and works on a completely automatic operation cycle.

Inspected balls are classified in this machine into 7 groups including 5 acceptable groups, one "undersize" and one "oversize" groups.

This machine operates on the gravity principle of classification, whereby the inspected balls are automatically fed from a hopper into two inclined chutes formed by two pairs of diverging bars (Fig. 12). The working edges of the extreme gauging bars are indented with six arcuated indentations each.

The balls roll from the hopper along the chutes until they reach one of the holes formed by the identation of the gauging bar and the straight edge of the central guiding bar, the diameter of which coincides with the required ball diameter. If the diameter of the inspected ball equals the required diameter, the ball will fall through a hole under the indentation and then through a tube into a corresponding box in the machine table; undersize balls will fall into the first tube from the hopper, while oversize balls will drop into the tube attached to the end of the chute.

The angle between the extreme and central gauging bars can be adjusted for the different groups of balls to be inspected and classified.

The capacity of this automatic machine is from 15,000 to 30,000 balls per hour, depending on their diameter. The smaller the diameter of the balls, the greater the capacity of the machine.

The Model ASH-26 Automatic Checking Machine is designed for inspecting and classifying balls from 8 to 26 mm in diameter at a rate of from 2,500 to 10,000 balls per hour.

The operation of the Model ASH-26 Automatic Machine is similar to that of the Model ASH-8 Automatic Machine.

BEARING RING AUTOMATIC CHECKING MACHINES

Our automatic machines for inspecting and sorting bearing rings according to their height and for face parallelism, are of original design, and are extensively employed in ball-bearing industry.

The Model 5AKB Automatic Bearing Ring Checking Machine (Fig. 13) is one of the technically perfect multi-dimension automatic measuring machines operating on the combined pneumo-electric system of measuring. It is deligned for inspecting the outer and inner rings of bearings (excluding those of taper roller bearings) for height and face parallelism, at a rate of 600 to 800 rings per hour, with an accuracy of 0.001 mm.

This machine is hopper-loaded and its operation cycle is fully automatic.

The inspected rings are automatically classified into "good" and "reject" rings according to their elements, and the good rings are counted by a special counting device.

The machine is equipped with a photoelectric interlocking device which controls the ring feed. This device automatically stops the machine and causes an emergency red lamp to light in the event of improper feed or interruption of the feed.

Two models of this machine are manufactured: Model 5AKB-1, for rings from 16 to 30 mm in diameter, and a height of not less than 6 mm, and Model 5AKB-P, for rings from 30 to 52 mm in diameter and a height of not less than 10 mm.

Model 17AKB, which is similar in design to Model 5AKB, is employed for inspecting the bearing ring height of bearings from 50 to 80 mm in diameter.

Model 5AKDA Automatic Checking and Sorting Machine (Fig. 14) is a high-precision, highly efficient, multi-dimension measuring machine designed for inspecting and sorting the outer rings of bearings (excluding those of taper roller bearings) according to outer diameter and perpendicularity of the axis of the outer surface to the bearing ring face.

The measuring principle of this machine is the same as that of the Model 5AKB Machine. Its capacity is from 600 to 800 rings per hour. Accuracy — ± 0.001 mm.

Two models of this machine are manufactured:

a) Model 5AKDA-1, for rings from 20 to 30 mm in diameter and not less than 7 mm in height.

b) Model 5AKDA-P, for rings from 30 to 52 mm in diameter and not less than 10 mm in height.

For inspecting the outside diameters of ball bearing outer rings from 50 to 80 mm in diameter, we manufacture Automatic Checking and Sorting Machine Model 17AKD (Fig. 15), which is identical in design with Model 5AKDA.

Model 19AK Automatic Checking and Sorting Machine for inspecting and sorting bearing inner rings according to bore diameter and perpendicularity of the bore axis to the ring face, is designed on the same principle as the Model 5AKDA machine.

Accuracy — ± 0.001 mm

Capacity — 900 rings per hour.

Soviet industry produces automatic checking and measuring machines on a increasing scale which not only meets the demands of our domestic industry for these precise and high-productive machines, but also permits their export in considerable quantities.

Soviet automatic machines for inspecting certain types of mass production parts are employed in China, Czechoslovakia, Austria, Rumania and many other countries. Their high quality, originality of design, simplicity and reliability in operation, have won the highest approval from experts in this field.

Readers interested in more detailed information about Soviet made automatic checking and measuring machines are invited to address their enquiries to the sole exporters of the above-mentioned equipment, V/O "STANKOIMPORT". Address: 32/34, Smolenskaja-Sennaja, Moscow G-200.

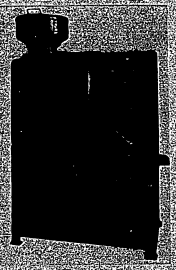


Fig. 13. Model 5AKB Automatic Bearing Ring Height and Face Parallelism Checking and Sorting Machine

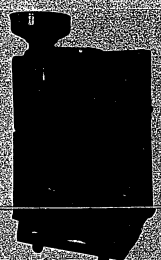


Fig. 14. Model 5AKDA Automatic Bearing Outer Ring Diameter and Axial Perpendicularity to Face Checking and Sorting Machine

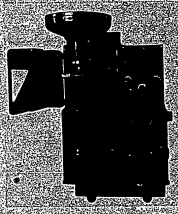
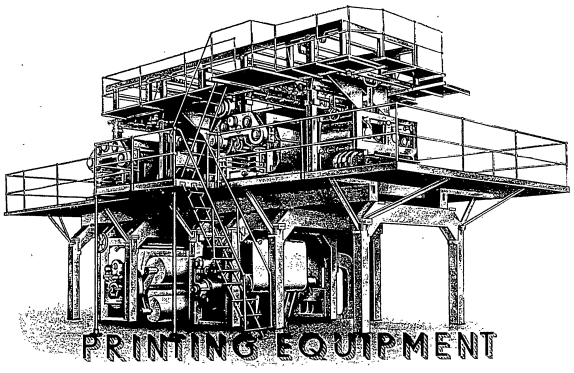
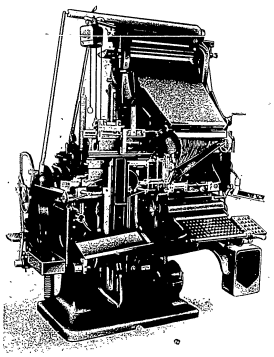


Fig. 15. Model 17AKD Automatic Bearing Outer Rings Diameter Checking and Sorting Machine



PRINTING EQUIPMENT



Composing slug-casting machine model H-5 with two magazines and two distributing bars. Type body from 6 to 12 points. Length of slug from 6 to 28 picas. Capacity — 7 slugs per minute

The annual production of the printing industry of the USSR totals 4.5 billion newspapers, over 1.5 billion magazines and about 1 billion books and pamphlets. These figures alone testify to the large-scale development of the printing industry in the USSR.

In the current five years (from 1955 to 1960) it is planned to obtain a further substantial increase in the rate of production of the printing plants.

As a result of the wide expansion and development of works producing printing equipment, the USSR began to export printing machinery in the post-war period. The volume of printing machinery exports tripled in the period from 1954 to 1956.

Printing machines branded "Made in USSR" are exported to Europe, South-Eastern Asia and the Near and Middle East.

Printing equipment manufactured in the USSR is adapted to all kinds of work connected with the production of books, newspapers, magazines, pamphlets, as well as for printing posters, labels and all kinds of multicolour work.

Machines for composing, photo-engraving, stereotyping, printing, and bookbinding departments may be supplied at the buyer's request.

We give here a brief summary of the outstanding features of Soviet printing equipment for which there is an ever increasing demand on the world market.

In the field of equipment for composing rooms, composing slug-casting and type-casting machines and proof presses are now available for export.

There is an especially great demand in different countries for composing and slug-casting machines models H-4, H-5 and HMC. These machines are designed for composing and casting slugs from 6 to 28 picas long with a type body from 6 to 12 points at a rate up to 7 slugs per minute.

All the operations connected with the casting and finishing of slugs and the distribution of matrices are effected automatically in these machines.

The machine model H-4 is provided with 4 magazines and one distributing bar. The machine model H-5 has two magazines and two distributing bars, so that matrices from two magazines may be simultaneously assembled in one line and distributed into two magazines.

The composing and slug-casting machine model HMC embodies an original design. It is provided with two magazines accomodating up to 15 matrices each. This machine is remarkable for its portability, simplicity of operation and durable construction. Not more than 2 sq. m of space are needed for the installation of a HMC machine weighing 950 kg.

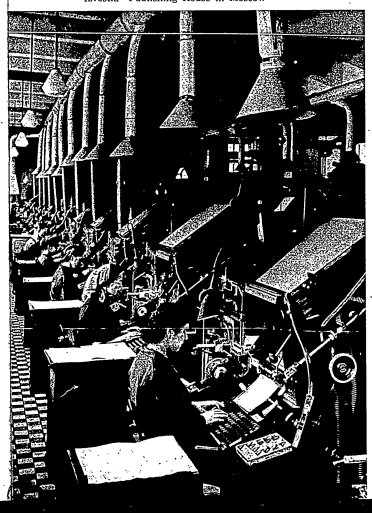
The slug-casting machine model HMC has found widespread application in small printing establishments.

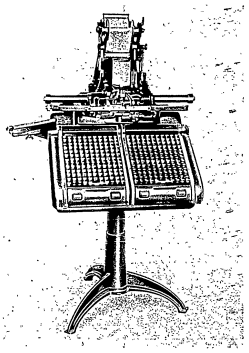
The composing and type-casting machines models MO with an hourly capacity of 9000 characters may be supplied at the buyer's request, complete with a perforating-typesetting machine and a compressor unit.

The modernized type-casting machines models NSHL-1 and NSHL-2 have been put into serial production. These machines are for gas or electric heating of type metal respectively.

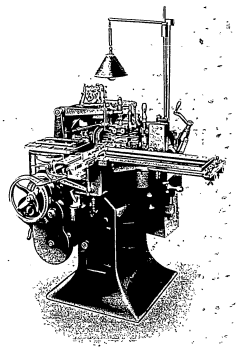
At the buyer's request, type-casting machines for any type height provided with matrices for the Roman alphabet of different series and type bodies, may be supplied.

View of the composing room in the printing plant of the "Izvestia" Publishing House in Moscow

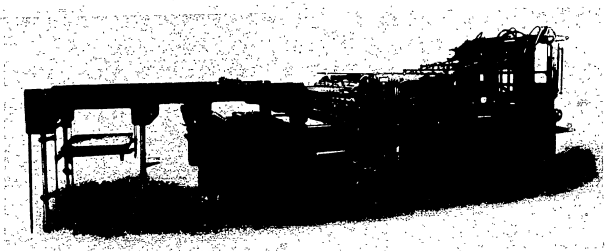




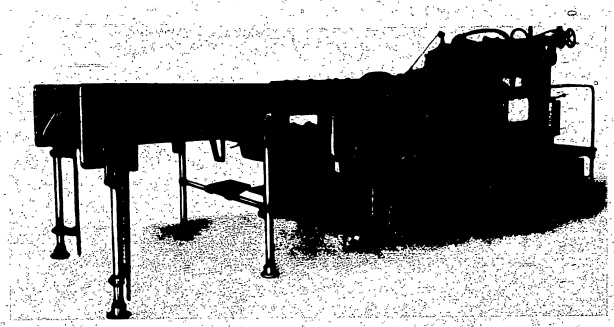
Perforating typesetting machine model MK. Type body 6, 8, 10 and 12 points. Size of composed line from 8 to 40 picas. Number of keys 266, of which 225 are character keys



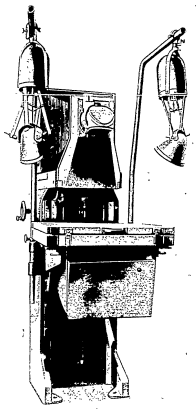
Automatic type-casting machine model MO. Type body from 6 to 12 points Size of composed line from 8 to 40 picas. Capacity of machine 9000 characters per hour



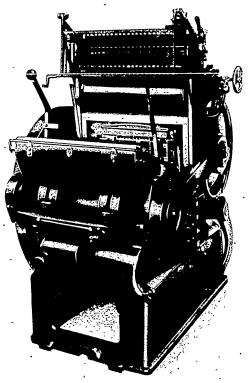
Two-revolution two-colour flatbed press model DDS with suction feeder and high pile delivery of printed sheets. Maximum size of paper 70×108 cm



Two-revolution flatbed press model DPP with suction feeder and high pile delivery of printed sheets. Maximum size of paper 84×108 cm

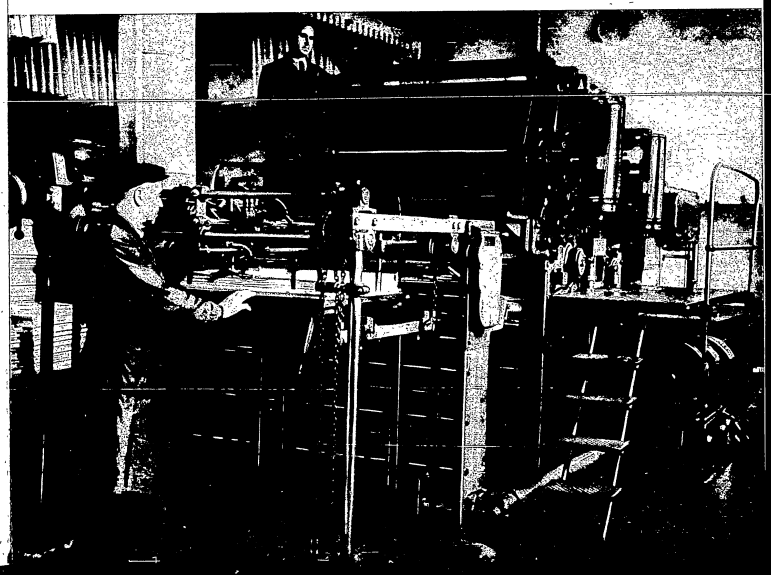


Vertical automatic focussing process camera model FV-2. Size of ground glass 400×400 cm. Lens with focal length 300 mm and an aperture ratio 1 : 9



Plates printing press model TT-1 with hand feed of paper. Maximum size of paper 30×40 cm

Two-colour offset press model POL-1 with a capacity of 6000 impressions an hour. Maximum size of paper 86×108 cm



In the field of process equipment, horizontal and vertical process cameras, printing frames and vertical whirlers of different sizes are available.

In the stereotyping field there is available for export a great variety of different units and automatic machines for matrix molding and for casting and finishing flat and round stereo-plates. Equipment for making offset printing forms and zinc-plates may be supplied as well.

An ever increasing demand is noted for high speed multiroll presses for printing large runs of 4, 6, 8, 12 and 16-page newspapers, rotary presses in different models for producing newspapers, magazines and books, two-colour offset presses, flatbed two- and single-colour presses as well as small flatbed cylinder and plates printing presses.

The printing presses are of various sizes and capacities. They are designed to suit the requirements of big specialized plants as well as of small printing offices

The flatbed single- and two-colour printing presses are provided with suction feeders and on buyer's request they may be delivered either with a low-pile or a high-pile delivery.

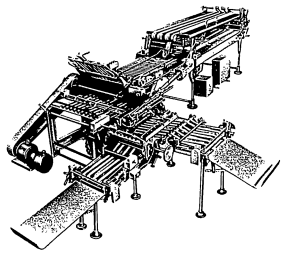
The machines have ample inking arrangements and ensure a high power of impression, so that they may be used for printing high quality art work.

For small printing establishments producing newspapers and booklets, a special set of printing equipment is available, comprising a composing and slug-casting machine model HMC, a hydraulic matrix moulding press model MP-150, a semi-automatic curved casting mold model CLP-1, a curved plates planing and routing machine model MSG-1 and a rotary printing press model PRG.

All these machines are original in design and easy to operate. The space required for their installation is 20 sq m. The total weight of these machines is 6500 kg.

The machines are strongly built and may be transported in autocars.

The printing press model PRG is designed for printing two- or four-page 29.7×42 cm newspapers, eight-page 21×29.7 cm booklets or sixteen-page 15×21 cm booklets (with auxiliary folding of booklets being done outside the machine).



High speed buckle folder model FK Maximum size of sheets prior to folding 60×92 cm and minimum size 21×27 cm Maximum number of folds — 3

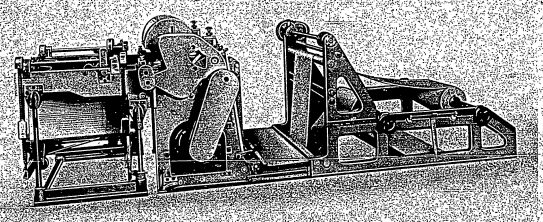
The capacity of the machine is 20,000 copies of four-page and 40,000 copies of two-page newspapers an hour.

In the bookbinding field the following machines are supplied three-knife trimmers for different sizes of jobs and single-knife cutters for different lengths of cut, high speed buckle and knife folders, gatherers, combined machines for compressing, rounding and backlining and other bookbinding equipment

Such, in brief, are the printing machines now in regular production in the USSR.

Special engineering departments and research institutes, working in close co-operation with machinery works, are engaged in designing and producing new models of high speed machines which will meet the high standards of modern techniques

Circular sheeting machine model LP for sheeting simultaneously from two reels. The diameter of rolls to be cut into sheets is 900 mm and the width from 60 to 920 mm. Operating speed of machine up to 60 cuts per minute.



PRINTING OFFICE EQUIPMENT

TYPE SETTING MACHINES
PHOTO-MECHANICAL MACHINES
STEREOTYPE MACHINES
PRINTING PRESSES
BOOKBINDING MACHINES
BOOKSTITCHING MACHINES

A machine for every purpose

The E-153 0.15 cu.m (0.2 cu. yd) capacity Excavator & Bulldozer tackles a wider range of jobs—brings big performance and a greater efficiency. Hydraulic controls of working mechanisms, 37-B. H. P. 4-stroke diesel engine and a maximum payload of 1500 kg are some of the special features of this versatile machine.

For futher details write to V/O "Machinoexport" 32/34, Smolenskaja-Sennaja, Moscow G-200.

Exported by
V/O "MACHINOEXPORT"

MICROSCOPES

Soviet microscopes are very popular in scientific and industrial laboratories, in educational and medical institutions both in the Soviet Union and abroad.

The fields of application of microscopes are exceptionally wide. Botany, zoology, biochemistry, medicine, agriculture, scientific and industrial laboratories are only some of the branches in which microscopes have found use.

Buyers may receive detail information about Soviet microscopes in catalogues of the Vsesojuznoje Objedinenije "Stankoimport", the only exporter of optical instruments from the USSR.

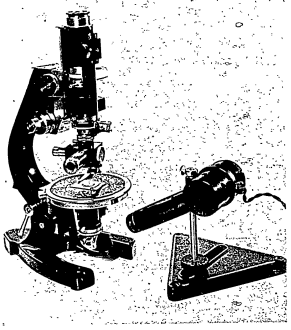
ALL-PURPOSE BIOLOGICAL RESEARCH MICROSCOPE MBI-6

When selecting laboratory equipment for large new biological or medical research laboratories, particular attention should be given to the MBI-6 All-Purpose Biological Research Microscope.

With the MBI-6 Microscope it is possible to study translucent objects with all up-to-date methods of light microscopy on a bright or dark ground, in transmitted or reflected light, using phase contrast in the transmitted light.

The optical system of the microscope comprises the following parts: water-immersion objectives for phase contrast, apochromatic lenses with maximum aperture, objectives with a flat ground, pancratic condenser, combined condenser for light and dark grounds.

These objectives and eyepieces enable the microscope to provide for magnification in transmitted or reflected light: at visual observation—up to 1500×, when photographing on film—up to 1600×, and when photographing on a plate—up to 2500×.



LARGE POLARIZING MICROSCOPE, MODEL MIN-4

The MIN-4 Polarizing Microscope has wide applications in mineralogy, petrography and mineralography. It can also be used in chemistry and biology.

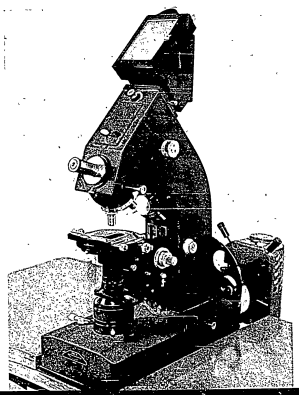
The Microscope set of objectives and eyepieces provides for research with a magnification from 18.5× to 1350×.

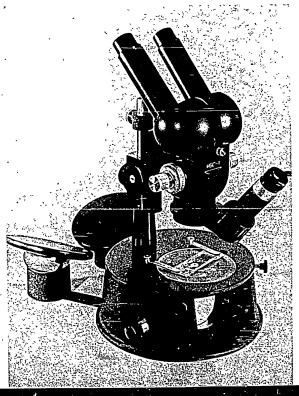
STEREOSCOPIC MICROSCOPE, MODEL MBS-1

The MBS-1 Stereoscopic Microscope provides for a direct three-dimensional image of the investigated object in transmitted or reflected light.

The MBS-1 Microscope is used mainly for the investigation of preparations, three-dimensional objects and living organisms with artificial or natural (day light) illumination.

The MBS-1 Stereoscopic Microscope provides for observation of objects with a magnification from 3.5× to 119× with a corresponding field of view from 39 to 1.9 mm.





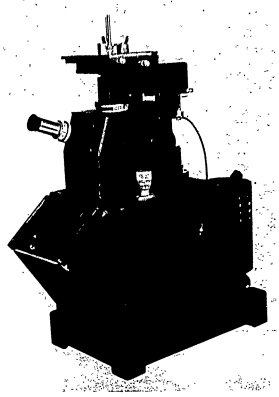
VERTICAL METALLOGRAPHIC MICROSCOPE, MODEL MIM-7

The MIM-7 Vertical Metallographic Microscope is designed for the examination and photography of the microstructure of metals and alloys with usual falling light on a bright or dark ground, and with polarized light on a bright ground.

This microscope is used in industrial laboratories of the metalworking and metallurgical industries, in research laboratories and educational institutions.

The set of objectives and eyepieces furnished provides for magnification from 60× to 1440× at visual observation, and from 70× to 1250× at photography.

The MIM-7 Microscope is compact and convenient in handling.



HORIZONTAL METALLOGRAPHIC MICROSCOPE, MODEL MIM-8

The MIM-8 Horizontal Metallographic Microscope provides for visual observation and photography of metal microsections on a light or dark ground with oblique illumination and in polarized light.

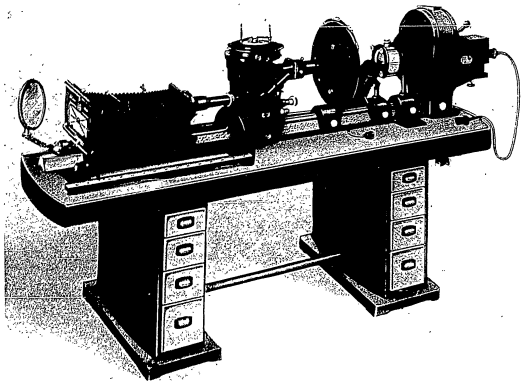
The MIM-8 Microscope is furnished with a set of apochromatic and achromatic objectives and eyepieces providing for the following magnification:

a) at visual observation from 100× to 1350×;

b) at photography from 45× to 2000×.

The microscope is furnished with a photographic camera designed for 12×18 cm plates, bellows allowing a change of length from 160 to 600 mm, a metal plate holder for 9×12 cm plates, a wooden bilateral plate holder for 12×18 cm plates, an adapter, a multiplier, and a number of other accessories.

Exporter: V/O "STANKOIMPORT", 32/34, Smolenskaja-Sennaja, Moscow G-200.



TOOL STEELS

The production of high grade steels is one of the most important industries of the Soviet Union.

The technical level of metallurgy and the scale of production of high grade steels determine to a great extent the successful development of the machine-building, automobile, aircraft, and other key industries.

The production of all modern machinery, such as gas-turbine engines and radar installations, powerful transformers and semi-conductor valves, automobiles and television sets, electric motors, etc., etc., cannot be envisaged without high grade steels which are used not only for the manufacture of the machines themselves, but also for the tools employed in the production of their individual parts and units.

The Soviet iron and steel industry not only meets the enormous domestic demands for high grade steels but also exports these steels in increasing quantities to many countries, where their high quality has created a growing demand for them. In the Soviet Union the manufacture of high grade steels is concentrated in large specialized enterprises staffed with skilled engineers and workers and equipped with modern machinery. Raw materials of first class quality are used for smelting steel. The highly developed ferro-alloy industry of the Soviet Union supplies our high grade steel mills with all the alloys of silicon, manganese, tungsten, chromium, nickel, molybdenum and titanium necessary for the production of high grade steel. Steel is manufactured by the most up-to-date technological processes, oxygen blast and vacuum smelting being employed on a wide scale.

Scrupulous control and inspection is ensured at all stages of the technological processes of steel smelting and immersion thermocouples are widely employed for temperature control in electric-furnace steel manufacture.

Our iron and steel industry possesses a great number of specialized plants for processing high grade steels. These plants are equipped with modern installations and special equipment for rolling, heat-treating and finishing high grade steel, and also with instrumentation and automation ensuring rigid control of the various technological processes — an indispensable factor in the production of high grade steel.

Hot rolling sheet mill installed in the Kemerevo Metallurgical Works

* * *

Tool steel occupies a place of its own among high grade steels. Soviet metallurgists have elaborated many grades of steel now available for producing a wide range of tools possessing physical and mechanical properties far above those of the materials they are designed to process. The high grade of this steel, ensured by strict standardization of the chemical analyses, melting process, heat treatment etc., makes it possible to produce a wide range of tools which today enjoy a high reputation not only in the Soviet Union, but in many foreign countries as well.

The tool steels manufactured in the Soviet Union are classified, according to their chemical analysis, into the following three groups:

1. Carbon tool steels.
2. Alloy tool steels.
3. High-speed tool steels.

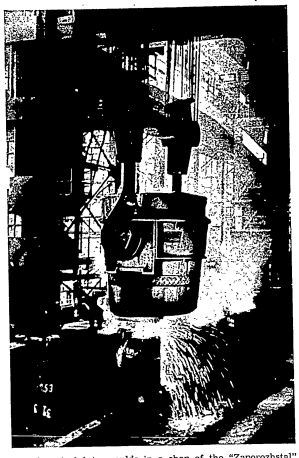
This review makes no claim to completion, offering as it does only brief descriptions of the chief grades of tool steels available for export.

Carbon Tool Steels

Carbon tool steels are manufactured in basic and acid openhearth furnaces and in electric furnaces. They are delivered in the hot-rolled, forged and cold-rolled condition.

Carbon tool steels of the following grades: Y7, Y8, Y8Г, Y9, Y10, Y11, Y12, Y13, Y7A, Y8A, Y8ГA, Y9A, Y10A, Y11A, Y12A and Y13A have a carbon content ranging from 0.65% to 1.35%, manganese content ranging from 0.15% to 0.35% and a minimum sulphur and phosphorous content.

These steels possess high mechanical and physical properties. The chief grades of carbon tool steels and their application are described below:



Teeming steel into moulds in a shop of the "Zaporozhstal" Metallurgical Works

Grades Y7A and Y7 carbon tool steel — for manufacturing tools subject to shocks and blows and requiring high ductility combined with moderate hardness — for forging dies, shears for cutting tinplate, perforators, cold chisels, cold stamps, etc.

Grade Y8ГA steel — for cross saws and hack-saw blades.

Grades Y8A, Y8 and Y8Г steel — for tools subject to blows and requiring increased hardness combined with sufficient ductility — for dies, scissors and metal cutting shears, punches, metal cutting saw blades, etc.

Grades Y9A and Y9 steel — for tools requiring hardness combined with sufficient ductility, such as perforating dies, woodworking tools, etc.

Grades Y11A, Y10A and Y11 steel — for tools not subject to sudden and hard blows, but requiring sufficient ductility on their sharp edges — for lathe and planing tools, drills, taps, reamers, die-chasers, drawing rings, milling cutters, shaped dies and drills for hard rock.

Grades Y12A and Y12 steels — for tools not subject to blows and which require great hardness — for lathe and planing cutters, milling drills, taps, reamers, die-chasers, razors, sharp surgical instruments, gauges, etc.

Grades Y13A and Y13 steels—for tools not subject to blows and requiring exceptional hardness, such as tools for machining hard metals, razors, scrapers, draw plates, etc., drills, engraving tools files, etc.

Alloy Tool Steels

The chemical composition of alloy tool steels differs from that of carbon tool steels by the increased silicon or manganese content, or by the content of one or more of the following alloying elements: chromium, tungsten, molybdenum, vanadium, nickel, etc.

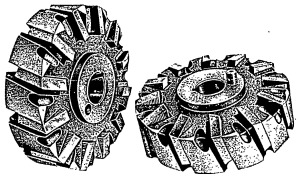
These alloying elements considerably improve the mechanical and physical properties of the steels, increase their strength and ductility and ensure a higher resistance to shock loads and abrasion.

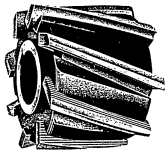
Alloy tool steel permits the employment of a milder quenching medium (i. e. oil instead of water). Such quenching tends to minimise the development of residual stresses in the steel, reduces the danger of warping, the occurrence of quencing cracks and so on, thereby ensuring the production of high class tools adapted to the most arduous working conditions.

Alloy steel is also manufactured in basic and acid openhearth furnaces and electric furnaces and is delivered in the hot-rolled, forged, cold-rolled, gauged or polished (silver steel) conditions.

USSR State Standard (ГОСТ) 5950-51 specifies the following fundamental grades of alloy tool steels and their approximate application:

Grade X12 steel (chromium content—11.5 to 13.0%) — is used for manufacturing cold working dies requiring high abrasive resistance and not subject to strong blows and shocks, for draw plates, gauging dies, bending and forming dies, for blanking and perforating dies and punches.





Grade X12M steel (chromium content—11.0 to 12.5%) —for approximately the same purposes and, in addition, for manufacturing intricate shaped profiling rolls, intricate shaped body die sections, intricate piercing dies and punches, deep metal drawing dies and for other complicated dies and punches.

Grade XГ steel is used for tools which should show as little deformation as possible during hardening, such as: measuring instruments, gauges, templates, long-tailed taps, die-chasers, die-casting forms, etc.

Grades X09, 9X, X05, 7X3 and 8X3 alloy tool steels with a chromium content ranging from 0.40 to 1.60% are used for producing cold-rolling rolls, dressing tolls, cold-upsetting dies and punches, lathe, planer and slotter tools, razor blades and razors, sharp-edged surgical instruments, hot-upsetting dies, etc.

Grades 9XC, 6XC and 4XC chromium-silicon alloy tool steels containing from 0.95 to 1.60% of chromium and from 0.6 to 1.60% of silicon are used for manufacturing drills, milling cutters, taps, die-chasers, pneumatic chisels and cold stamping dies, hot and cold metal-cutting shears and for hot drawing dies. Steels of these grades as well as, the above-mentioned grade XГ, X09, 9X and X05 are guaranteed to have a microstructure free from coarse laminated pearlite and carbide network.

Grade XГC chromium-silicon manganese steel is used for manufacturing measuring instruments for which any considerable warping during hardening is inadmissible.

Steels of grades Ф, 8XФ and 85XФ, containing from 0.15 to 0.40% of vanadium, and grade B1 steel, containing up to 1.20% of tungsten, are used for manufacturing coining dies, cold metal cutting shears, gang-saws, twist drills, taps, roller shears, etc.

Chromium-tungsten steels of grades 3X2B8, 4X8B2 and XB5, with a tungsten content ranging from 2.0 to 9.0%, are used for manufacturing dies and punches employed for very strenuous working, for hot work (excepting grade XB5) and for tools employed for machining hard materials, etc.

Chromium-tungsten-silicon steels of grades 4XB2C, 5XB2C and 6XB2C, containing from 2.0 to 2.7% of tungsten and up to 0.90% of silicon, are used for making pneumatic tools, cold chisels, cold cutting metal shears, for screw-cutting dies, for cold working punches and dollies.

Chromium-tungsten-manganese steels of grades XBГ, 9XBГ and 5XBГ, containing from 0.50 to 1.60% of tungsten and up to 1.20% of manganese, are used for making measuring instruments and cutting tools for which any considerable warping during heat treatment is inadmissible, for thread gauges, special instruments, for intricate shaped and high-precision dies which should not display any considerable volume changes and warping during heat treatment, for intricate-shaped cold-piercing punches, etc.

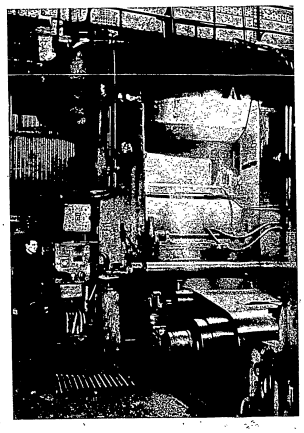
Chromium-nickel steels of grades 5XHM and 5XHT containing from 1.4 to 1.8% of nickel, and grade 5XГM chromium-manganese-molybdenum steels, containing up to 0.30% of molybdenum, are used for manufacturing drop forge and steam hammer dies from large and medium sized blocks

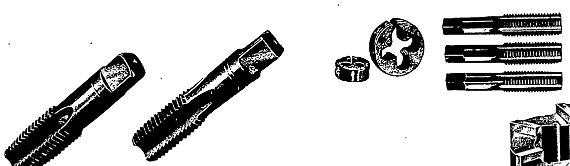
High-Speed Tool Steel

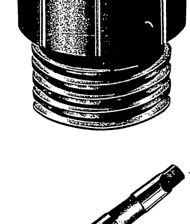
High-speed tool steel is delivered in the hot-rolled, forged (rounds, squares and strips) and cold-drawn polished (silver steel) condition.

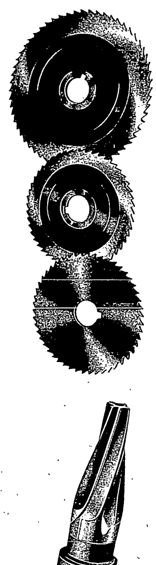
High-speed tool is intended for the manufacturing of

In the cold rolling shop of the "Zaporozhstal" Metallurgical Works









a wide range of high-production tools possessing a high wear resistance and retaining their cutting properties during operation at temperatures up to 600⁰ C.

Two grades of high-speed tool steel—P18 and P9—are standardized in the Soviet Union. Their approximate chemical composition is given below:

Grade of steel	Chemical Composition, %				
	C	Cr	W	Va	Mo
P 18	0.7-0.8	3.8-4.4	17.5-19.0	1.0-1.4	0.3
P 9	0.85-0.95	3.8-4.4	8.5-10.0	2.0-2.6	0.3

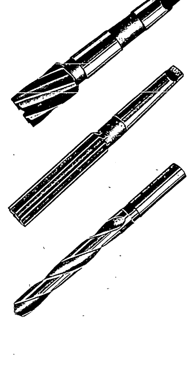
Carbon tool steel is subjected to a hardenability test according to a scale established by the standard, and is delivered in the annealed condition.

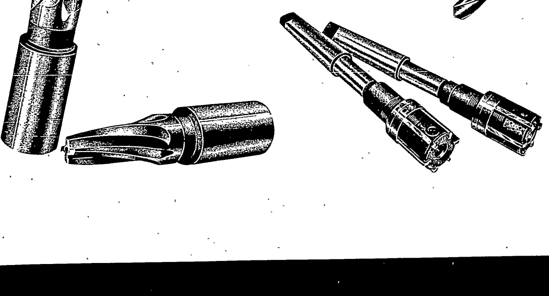
Alloy tool steel is delivered in the annealed or high tempered condition.

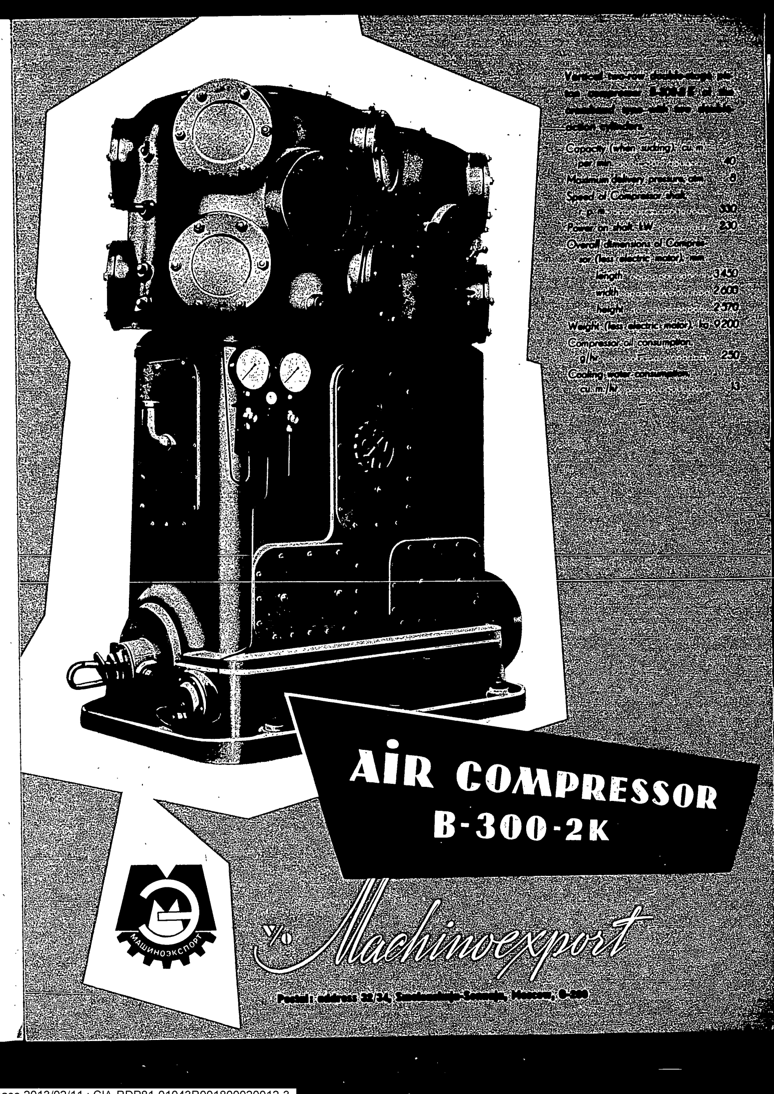
High-speed tool steel is delivered in the annealed condition.

USSR state standards for tool steels specify strict carburization depth limits and rigid control of the steel at all stages of the manufacturing process and the employment of the most up-to-date control and inspection methods: spectrology, magnetic and ultra-sonic defectoscopy and other modern methods which guarantee high qualitiy of steel and full conformance to the customers' specifications.

The export of ferrous metals from the Soviet Union is handled by the Vsesojuznoje Objedinenije "Promsyrioimport", 32/34, Smolenskaja-Sennaja, Moscow G-200.



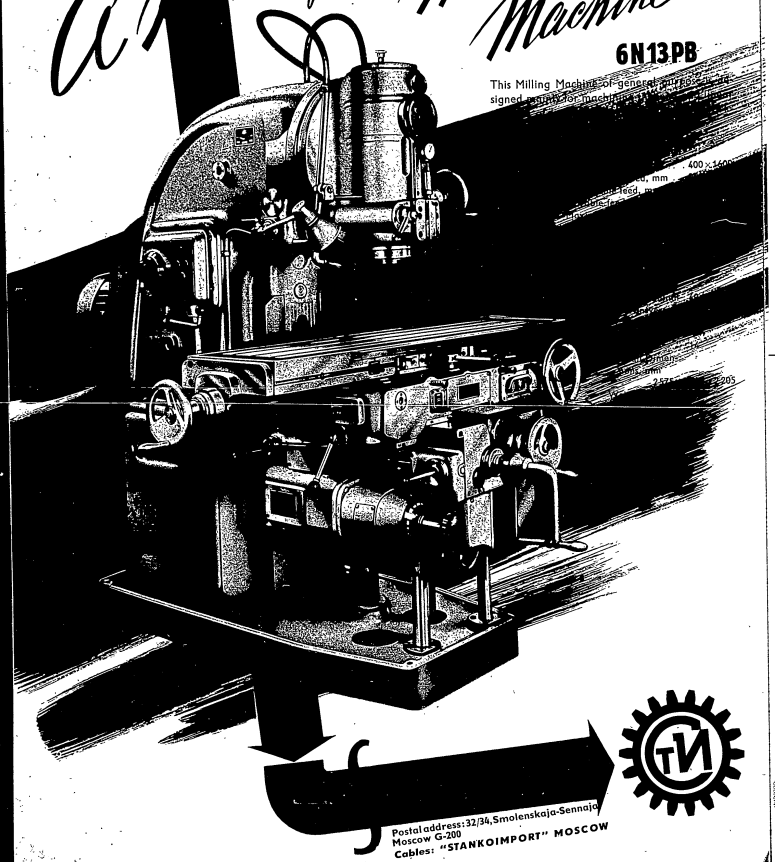




A High-Speed Milling Machine!

6N13PB

This Milling Machine of general purpose is designed mainly for machining [illegible]



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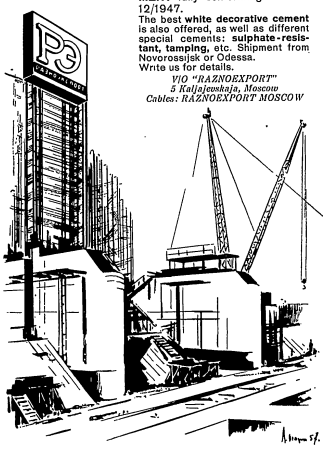
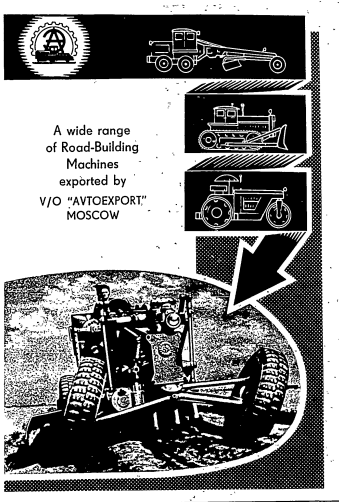


A wide range of Road-Building Machines exported by V/O "AVTOEXPORT" MOSCOW



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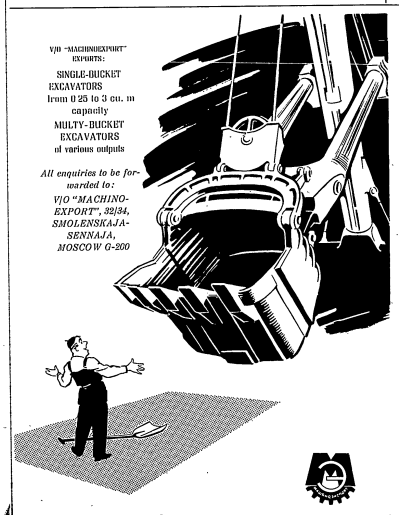

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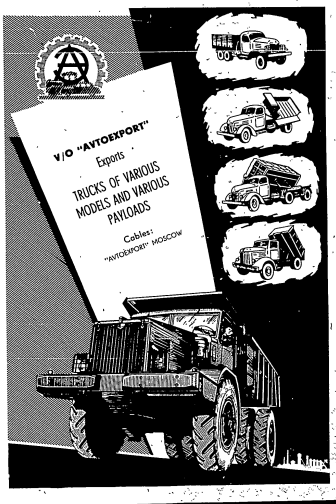
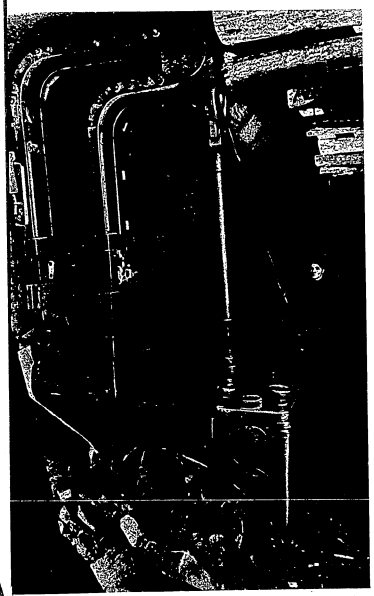




The whole process of coal mining is mechanized. The photograph illustrates a powerful cutter loader in one of the mines of the Moscow Basin

Solid Fuel

The Soviet Union possesses huge resources of coal. Its deposits extend from the Carpathian Area in the West to the shores of the Pacific in the East. Coal is being mined in more than twenty coal basins of which the most important are: the Donetz, Kuznetsk, Karagandah, Irkutsk, Pechora, Moscow Area and Urals.

Having mined 391 million tons of coal in 1955, the USSR today ranks first in Europe and second among world's biggest coal producing countries. Coal is a traditional item in the Soviet Union's exports.

It is the Donetz anthracite that has won the greatest popularity on the world market.

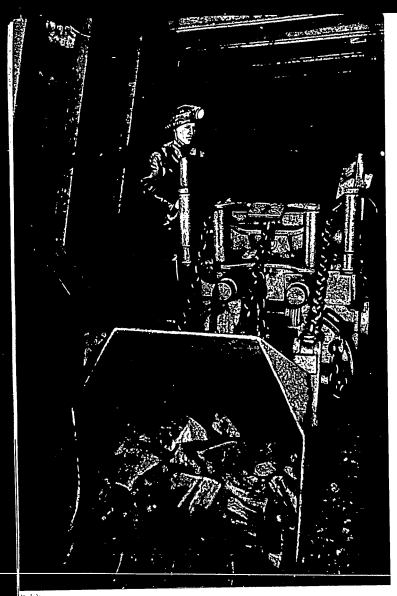
Concentrated in the Donetz Basin are the Soviet Union's largest anthracite deposits. Anthracite is mined in a number of coal basins of Western Siberia as well. The Donetz anthracite is famous for extremely high qualitative indices. Due to a small emission of volatile matter, high mechanical strength and low moisture content, anthracite can be stored for a long time without a change of its physics and chemical properties and without undergoing spontaneous combustion. The Donetz anthracite's great solidity, due to its being the maturest coal, permits to transport it comparatively long distances without significant handling losses.

Its high calorific value, high combustion temperature and low ash content provide a very high efficiency. Of all grades of solid fuel it is the Donetz anthracite that contains the largest quantity of carbon.

The Donetz anthracite is an excellent fuel for use in homes. During combustion it gives a short flame, very little smoke, does not cake and, what is extremely important in a home, does not produce the specific coal smell.

Another advantage of anthracite is the fact that it burns slowly providing an uniform heat emission and

The hydraulic method of extracting coal is being extensively applied in the mines of the Kuznetz Basin, one of largest in the country. Water feeds the coal from the breast to the pumping chamber and from there to the surface to the concentrating mill. This method eliminates the necessity of cars, electric locomotives and a large personnel



Coal loading in one of the Kuznetz Basin mines

therefore a steady temperature in the premises being heated. This makes it possible to have small stoves with simple furnaces and simplifies furnace servicing.

Thus one of the steady buyers of Soviet anthracite — the Italian firm "A. Moroni and Koller," Venice, has aptly called it "the best night fuel."

The ash content of the higher Donetz anthracite grades does not exceed 6%, averaging practically 3 to 4%, and thus being, as it is, a ballastless fuel; it does not slag, and this facilitates the cleaning of furnaces where it is used.

The great solidity of the Donetz anthracite impacts it another valuable quality: it does away with coal-dust formation and does not dirty the premises where it is fired or kept. Anthracite is an unsurpassed fuel for fireplaces.

The Donetz anthracite is an excellent industrial fuel as well. It is used in steamship and locomotive fire boxes, in automobile and tractor gas generators. The strongest grades of anthracite are used even in foundry and blast-furnace processes.

Large-sized Donetz anthracite serves as top-grade raw material for the production of electrodes, calcium carbide, carborundum, artificial graphite, thermoanthracite and many other items.

The following grades of Donetz anthracite are exported by the Soviet Union:

Grade	Size of lumps, mm	Used for the following purposes:
АП	100 and over	For manufacturing electrodes, graphite and thermoanthracite
АК	25 to 100	For firing in homes
АМ	13 to 25	For firing in homes
АС	6 to 13	For chain-grate and mechanical feed stokers
АШ	0 to 10	For coal-dust furnaces of electric stations

The Soviet Union today exports anthracite to sixteen countries. Among the large-scale buyers of Donetz anthracite are France, Yugoslavia, Belgium, Netherlands, Finland, the German Democratic Republic, Sweden, Switzerland, Austria, Norway and other countries.

Donetz Coal

Apart from anthracite, high quality steam-fat and screened gas coals mined at the Donetz coal basin.

The "ПЖ" steam-fat coal belongs to the group of caking coals possessing good coking qualities. The Donetz steam-fat coal with 2-3% (maximum 5%) ash content and containing only traces of sulphur (0.3 to 0.5%, maximum 1%) gives high-quality metallurgical coke. At the same time it makes an excellent bunker fuel for steamships and locomotives.

The Donetz "ГК" gas coal is a top-grade industrial fuel most effectively used in mechanical stokers, stationary boiler houses, as power fuel for electric station furnaces as well as for gas generators. The "ГК" coal is a low ash- and sulphur-content fuel (ash maximum 5.5%; sulphur maximum 2%) and is therefore used as one of the components in a coke charge, increasing coke strength and chemical product emission.

Gas coal is successfully used as fuel for steamships and locomotives.

Donetz coal has won great popularity on foreign markets. A firm bearing the name of this coal ("Donetzkohlen") has been organized in Austria. Highly favorable references on the quality of the abovenamed coal grades have been coming from Yugoslavian, Austrian, Swedish, Greek, Egyptian, Italian, Icelandic, Argentine and other foreign consumers.

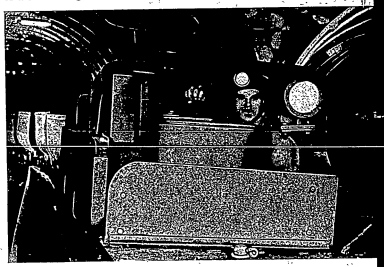
Our export assortment includes a coke charge as well. This charge consists of a mixture of three grades of low ash- and sulphur-content coals, composed in strictly defined proportions: 35% of "К" coke coal, 45% of "ПЖ" steam-fat coal, and 20% of "ПС" steam-caking coal. The coals are subjected to special enrichment at dressing plants and are delivered to one of the best coke-chemical plants in the Soviet Union—the Makeyevsky Plant, where they are mixed and crushed, i. e. where the coke charge is produced. The Donetz coke charge is an excellent half-finished product for the manufacture of top-grade metallurgical coke.

Pechora Coal

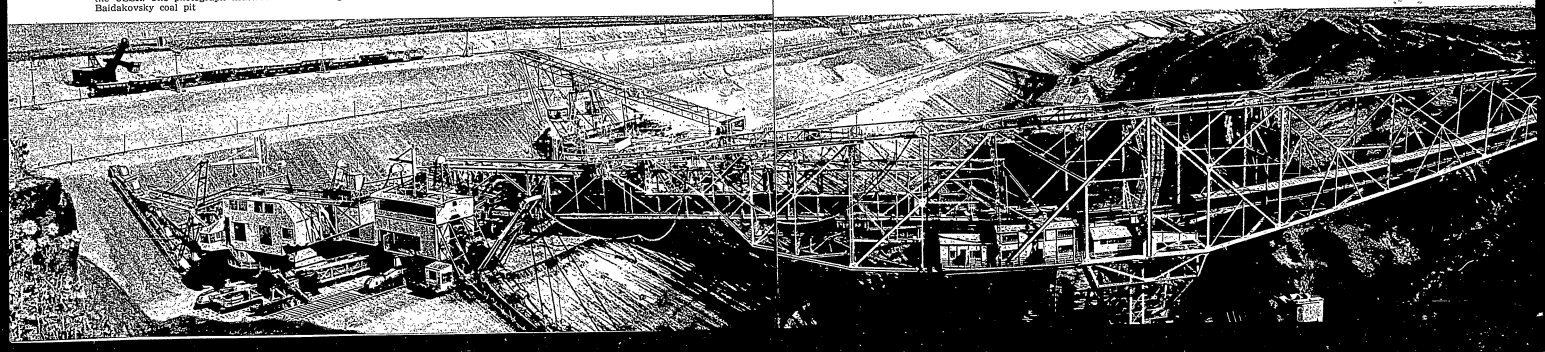
Although the Pechora coal basin is still comparatively "young" (it is only fifteen years ago that coal mining had been started here), its production has become

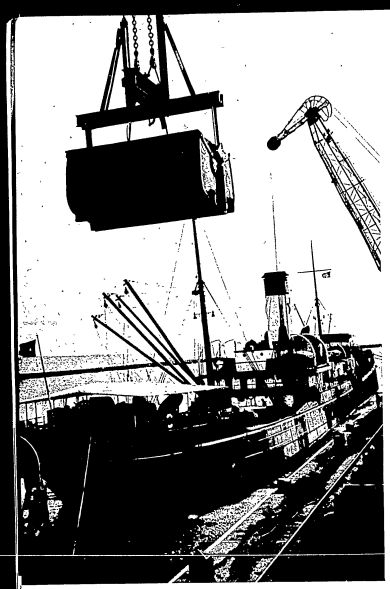
The Donetz Basin underground transport is equipped with modern, improved automatic block systems and signalling. The photograph shows a view of the underground dispatcher room

The well-built tunnels of the mines resemble the Moscow Subway. On the photograph you see a powerful electric locomotive hauling a heavily loaded coal train in the mine of the "Artemugol" Trust of the Primorje coal field



In addition to coal, a large amount of lignite is extracted in the USSR. The photograph illustrates a coal bridge of the Baidakovsky coal pit





Soviet ports through which coal is exported to foreign countries are equipped with special highly mechanized coal berths which considerably reduce the time necessary to load ships. The photograph shows the Yugoslav ship "Prench" being loaded at the coal berth of the Zhdanov port on the Azov Sea

well known to a multitude of foreign buyers in the German Federal Republic, Sweden, Finland, Belgium and other countries.

Steam-fat coal possessing high coking qualities and making good home-use and metallurgical coke is mined in this coal basin. Pechora coal is extensively used as power and bunker fuel as well as in industrial mechanical stokers.

Along with directly exporting coal the USSR undertakes the bunkering of foreign ships in Soviet ports. Foreign vessels are provided with the best grades of special bunker coals. Bunkering of foreign ships is done in the ports of Leningrad, Riga, Klaipeda, Ventspils, Arkhangelsk, Murmansk, Odessa, Zhdanov.

Coal Coke

An outstanding feature of the Donetz coke is its high mechanical strength—a factor which permits its being used in blast-furnaces of any dimensions.

The Donetz coke has a low sulphur content and contains practically no phosphorus.

The following kinds of coke are available for export: blast-furnace coke of over 25 mm lump sizes for iron and steel industry, foundry coke of over 40 mm lump sizes for non-ferrous metallurgy and metallurgical coke of 25 to 40 mm lump sizes, which can be used both for blast-furnace smelting as well as in gas generator installations and for home use.

The Donetz coke is highly appreciated on foreign markets.

Coal Tar Pitch

The Soviet Union holds one of the leading places among the not numerous exporters of this valuable by-product of coking.

Depending on its softening temperature coal tar pitch is classified into three groups: pitch with softening point (by Kremer-Sarnov method) of 65—75° C, that of 75—85° C and that of 130—150° C. All three groups are available for export; it is however the first group that holds the most important place.

The field of application for Soviet coal tar pitch is extremely broad. It is used as binding material in coal briquette production, as insulating material for cable laying and galvanic cell manufacture, as half-finished product for the manufacture of electrodes and other chemically resistant items of graphite and coal. Excellent varnishes and cheap plastics, chemically resistant containers and building elements are made from coal tar pitch. Pitch mixed with gravel and sand makes a reliable and waterproof pavement for highways. Pitch is also used in the manufacture of roofing materials, for waterproofing of foundations and other purposes. If pitch is treated with hydrogen under high pressure and high temperature, top-quality benzine is produced.

Soviet coal tar pitch possesses the advantage over pitches exported by other countries in that it is shipped in granulated form, and not in lumps. This facilitates and reduces the cost of handling operations to a great extent. The high chemical stability and water-resistance of pitch permit to transport it in bulk and to keep it in storage for a long time without damage to its quality.

Pitch Coke

Due to its low ash content, coal tar pitch tempered in coke ovens yields a very pure coke (maximum ash content 0.5%), that may be used as successfull substitute for the scarce oil coke in the electrolytic production of alluminium and in other spheres of the non-ferrous metallurgy. Pitch coke is also used in the manufacture of electrodes.

The exporter of coal, anthracite, coke, pitch and pitch coke from the Soviet union is V/O "Sojuzpromexport", 32/34 Smolenskaja-Sennaja, Moscow, G-200.

28th LENINGRAD INTERNATIONAL FUR AUCTION

Leningrad, one of the world's most beautiful cities, is the traditional scene of international auctions of Russian furs.

The first international fur auction was held in Leningrad in 1931. It was attended by 78 buyers from 11 countries and was a great success. Since then the Leningrad international fur auctions have won world-wide recognition and have become an important factor in the world fur trade.

At the 27th auction, held in July 1956, close to four million skins of fur-bearing animals and karakul were sold to representatives of 212 firms from 19 countries.

In connection with the forthcoming, 28th Leningrad International Fur Auction, "Soviet Export" has asked A. A. Kaplin, Chairman of V/O "Sojuzpushnina," to acquaint our readers with the history of the Leningrad international fur auctions, their importance in the world fur trade and the prospects of the 28th Auction. This is what A. A. Kaplin told us:

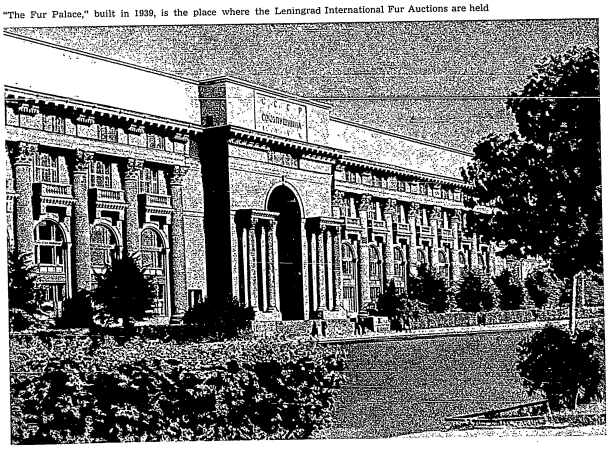
From times of old Russian furs have been an article of international trade. As far back as the IV and V centuries the peoples who inhabited the territory now forming the Soviet Union carried on a lively trade in furs among themselves and with peoples in the West and in the East.

In the IX century furs—mainly sable, beaver, otter and silver fox skins—were the principal articles of export in Russia. From the end of the XIV century Hanseatic merchants began to sell large quantities of Russian furs to England, France, Venice, Genoa and other countries in Western Europe.

The Russian fur trade, both domestic and foreign, reached its height in the latter part of the XVI century and in the XVII century, when furs began to arrive in very large quantities from Siberia (the yearly supply of sable, for instance, was more than 100,000 skins).

In the XVIII and XIX centuries the annual fairs held in Nizhni Novgorod and Irbit acquired considerable importance for the fur trade. These fairs remained a significant factor in the fur trade with foreign firms in the XX century, right up to the Great October Socialist Revolution. Many foreign companies, whose managers or authorized agents now attend the Leningrad international fur auctions, used to send representatives to the Nizhni Novgorod and Irbitsk fairs before the Revolution. The French "Revillon Frères S.A.," the British "Ariowitch Jacob Fur Co. Ltd.," the American "Motty Eitingon Inc." are only some of the firms which regu-

"The Fur Palace," built in 1939, is the place where the Leningrad International Fur Auctions are held



Mr. Gabe, director of an English fur firm, has become interested in these silver fox skins; an employee at the auction readily offers explanations

larly purchased large lots of furs at the Nizhni Novgorod and Irbitsk fairs.

After the Revolution Soviet foreign trade organizations sold Soviet furs abroad mainly through their representatives in England, Germany, the USA, France, Poland, Italy, Sweden, Uruguay and several other countries, as well as at fur auctions held in London, Leipzig and sometimes in Paris.

In March 1931, the first international fur auction was held in Leningrad. In spite of gloomy "forecasts" of the foreign press, 78 representatives of foreign companies from 11 countries attended this auction and 95 per cent of the furs displayed were sold.

The display was arranged at the Winter Palace (the Fur Palace, in which auctions are now held, was built only in 1939), while the sales took place in the banquet hall of the "Astoria" Hotel.

Upon their return home, the participants of the auction unanimously declared that the Russians had arranged the auction very well, had capably conducted it and had been very hospitable.

From 1932 to 1939, when the Second World War broke out, the Leningrad international fur auctions were held regularly twice a year—in March and in July. Buyers from many foreign countries who attended the annual Leningrad sales were amazed at the efficiency of the selling arrangements, and particularly at the quick delivery of the purchased furs to buyers. Thus, Mr. Rapoport, a merchant from Los-Angeles, on his return from the auction to the USA on the 19th September 1932 (the auction in Leningrad closed on the 15th August) was greatly surprised to discover that the furs purchased by him in Leningrad arrived in the USA on the same day and with the same steamer that brought him home. Mr. Rapoport immediately gave one of the magazines an interview concerning the fact, taking advantage of the occasion to inform Hollywood stars that from no one else could they buy the best Russian sable from the Barguzinsk region, superb silky Kamchatka fiery-red fox and snow-white Ishim ermine.

The first post-war international fur auction was held in Leningrad in July 1947. Subsequent auctions were held every year in July.

Russian furs, whose high quality was known in all parts of the world, continued to attract buyers from many countries.

The "British Fur Trade" magazine in its September issue of 1947 when mentioning the activity of London firms at the first post-war Leningrad auction, wrote:

"The London party had nothing but praise for the selling arrangements made by Sojuzpushnina . . . The warehousing was excellent".— said Mr. H. W. Chadwick of "Anning, Chadwick and Keiser, London," . . . There was unlimited room, and perfect lighting. I have never seen goods displayed so well."

"Mr. Chadwick paid a tribute to the staff on behalf of the British party, and Mr. S. H. Murley for the Americans."

No less successful were the Leningrad fur auctions held in the following post-war years.

The most recent, 27th International Fur Auction was held in July 1956. 119 foreign representatives from 19 countries attended the sales. 35 representatives came from the UK, 13 from the USA, 13 from Finland, 12 from Sweden, 10 from France, 8 from the Federal Republic of Germany, 5 from Holland, 3 from Belgium, 3 from Denmark, 3 from Switzerland, 2 from Austria, 2 from Hungary, 2 from Italy, 2 from Canada, 2 from Rumania, 1 from Albania, 1 from the German Democratic Republic, 1 from Norway and 1 from Czechoslovakia.

The 27th Fur Auction surpassed all previous ones in respect to quantity and assortment of furs displayed. More than 4 million skins of 45 species of fur-bearing animals and karakul, supplied by nearly every republic, territory and region of the Soviet Union were offered for sale.

Soviet hunters, karakul and fur animal breeders had to work hard to provide the 27th Leningrad Auction with such enormous quantities of furs and karakul.

Hunters of the Pechora region, the northern part of Tobolsk region; Bashkiria, Krasnoyarsk Territory, the Altai and Yakutia procured 95,680 ermine skins for the auction; 93,340 kolinsky skins were obtained in the Far East, the Transbaikal, Kolyma, Yenisei, Tobol and Kuznetsk regions of Siberia; 14,210 skins of baum marten came from the Kuban, Kama, Leningrad, Omsk and Vologodsk regions, and 2,300 skins of stone marten from the Caucasus and Middle Asia.

12,200 mink skins came from Siberia, the North and the Caucasus; 817,499 ondatra skins and 33,400 black fitch skins came from different parts of the country.

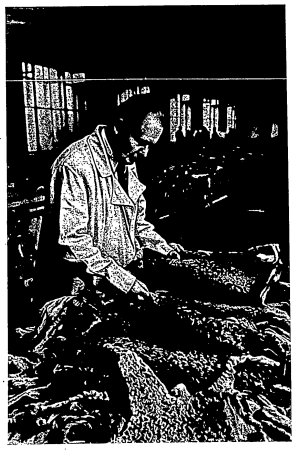
1,276,972 squirrel skins displayed at the auction were obtained by skilled hunters from the Pechora, Ob, Amur, Lena and Yenisei river basins, as well as from the Altai, Tuva, Transbaikal and Yakutia.

14,110 sable skins were procured by famous sable hunters of the Barguzinsk, Vitimsk, Minusinsk, Uryankhaisk districts, from Kamchatka, Krasnoyarsk Territory and Tyumen region.

Other lots placed on sale at the 27th International Fur Auction included more than 4,000 lynx skins, 120 panther skins, 40 leopard skins, 1,450 wolverine skins, 8,840 white-fox skins, 5,000 badger skins, 166 skins of the brown bear and large numbers of white fitch, nutria, muskrat, red-fox, marmot, wolf, white-hare skins, etc.

Karakul breeders supplied the auction sales with more than 850 thousand skins of various types of karakul.

Hunters from the Chinese People's Republic and from Mongolia also sent their production to the auction. 55,000 skins of mink (South China kolinsky),



Examining grey karakul skins in the "Fur Palace"

Real fur connoisseurs are gathered here. Dutch and Belgian merchants Messrs. Heertje, Sonnerfeld, Cazals, Van Beetz and Hoffman are exchanging opinions about the skins of Vologodsk marten on display

Brothers B. and A. Solomon from Paris and Mr. Eitington from New York examining skins of Kamchatka sable

Mr. Gabe, director of an English fur firm, has become interested in these silver fox skins; an employee at the auction readily offers explanations

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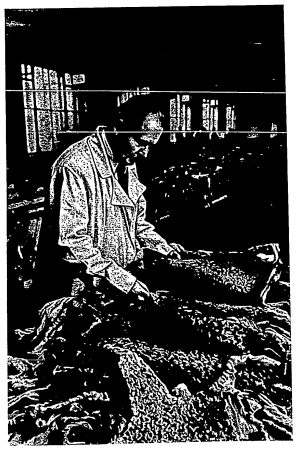
After the Revolution Soviet foreign trade organizations sold Soviet furs abroad mainly through their representatives in England, Germany, the USA, France, Poland, Italy, Sweden, Uruguay and several other countries, as well as at fur auctions held in London, Leipzig and sometimes in Paris.

In March 1931, the first international fur auction was held in Leningrad. In spite of gloomy "forecasts" of the foreign press, 78 representatives of foreign companies from 11 countries attended this auction and 95 per cent of the furs displayed were sold.



Examining grey karakul skins in the "Fur Palace"

The display was arranged at the Winter Palace (the Fur Palace, in which auctions are now held, was built only in 1939), while the sales took place in the banquet hall of the "Astoria" Hotel.

Upon their return home, the participants of the auction unanimously declared that the Russians had arranged the auction very well, had capably conducted it and had been very hospitable.

From 1932 to 1939, when the Second World War broke out, the Leningrad international fur auctions were held regularly twice a year—in March and in July. Buyers from many foreign countries who attended the annual Leningrad sales were amazed at the efficiency of the selling arrangements, and particularly at the quick delivery of the purchased furs to buyers. Thus, Mr. Rapoport, a merchant from Los-Angeles, on his return from the auction to the USA on the 19th September 1932 (the auction in Leningrad closed on the 15th August) was greatly surprised to discover that the furs purchased by him in Leningrad arrived in the USA on the same day and with the same steamer that brought him home. Mr. Rapoport immediately gave one of the magazines an interview concerning the fact, taking advantage of the occasion to inform Hollywood stars that from no one else could they buy the best Russian sable from the Barguzinsk region, superb silky Kamchatka fiery-red fox and snow-white Ishim ermine.

The first post-war international fur auction was held in Leningrad in July 1947. Subsequent auctions were held every year in July.

Russian furs, whose high quality was known in all parts of the world, continued to attract buyers from many countries.

The "British Fur Trade" magazine in its September issue of 1947 when mentioning the activity of London firms at the first post-war Leningrad auction, wrote:

"The London party had nothing but praise for the selling arrangements made by Sojuzpushnina . . . The warehousing was excellent" — said Mr. H. W. Chadwick of "Anning, Chadwick and Keiser, London," . . . There was unlimited room, and perfect lighting. I have never seen goods displayed so well."

"Mr. Chadwick paid a tribute to the staff on behalf of the British party, and Mr. S. H. Murley for the Americans."

No less successful were the Leningrad fur auctions held in the following post-war years.

The most recent, 27th International Fur Auction was held in July 1956. 119 foreign representatives from 19 countries attended the sales. 35 representatives came from the UK, 13 from the USA, 13 from Finland, 12 from Sweden, 10 from France, 8 from the Federal Republic of Germany, 5 from Holland, 3 from Belgium, 3 from Denmark, 3 from Switzerland, 2 from Austria, 2 from Hungary, 2 from Italy, 2 from Canada, 2 from Rumania, 1 from Albania, 1 from the German Democratic Republic, 1 from Norway and 1 from Czechoslovakia.

The 27th Fur Auction surpassed all previous ones in respect to quantity and assortment of furs displayed. More than 4 million skins of 45 species of fur-bearing animals and karakul, supplied by nearly every republic, territory and region of the Soviet Union were offered for sale.

Soviet hunters, karakul and fur animal breeders had to work hard to provide the 27th Leningrad Auction with such enormous quantities of furs and karakul.

Real fur connoisseurs are gathered here. Dutch and Belgian merchants Messrs. Heertje, Sonnerfeld, Casals, Van Beetz and Hoffman are exchanging opinions about the skins of Vologodsk marten on display

Hunters of the Pechora region, the northern part of Tobolsk region, Bashkiria, Krasnoyarsk Territory, the Altai and Yakutia procured 95,680 ermine skins for the auction; 93,340 kolinsky skins were obtained in the Far East, the Transbaikal, Kolyma, Yenisei, Tobol and Kuznetsk regions of Siberia; 14,210 skins of baum marten came from the Kuban, Kama, Leningrad, Omsk and Vologodsk regions, and 2,300 skins of stone marten from the Caucasus and Middle Asia.

12,200 mink skins came from Siberia, the North and the Caucasus; 817,499 ondatra skins and 33,400 black fitch skins came from different parts of the country.

1,276,972 squirrel skins displayed at the auction were obtained by skilled hunters from the Pechora, Ob, Amur, Lena and Yenisei river basins, as well as from the Altai, Tuva, Transbaikal and Yakutia.

14,110 sable skins were procured by famous sable hunters of the Barguzinsk, Vitimsk, Minusinsk, Uryankhaisk districts, from Kamchatka, Krasnoyarsk Territory and Tyumen region.

Other lots placed on sale at the 27th International Fur Auction included more than 4,000 lynx skins, 120 panther skins, 40 leopard skins, 1,450 wolverine skins, 8,840 white-fox skins, 5,000 badger skins, 166 skins of the brown bear and large numbers of white fitch, nutria, muskrat, red fox, marmot, wolf, white-hare skins, etc.

Karakul breeders supplied the auction sales with more than 850 thousand skins of various types of karakul.

Hunters from the Chinese People's Republic and from Mongolia also sent their production to the auction. 55,000 skins of mink (South China kolinsky),

Brothers B. and A. Solomon from Paris and Mr. Eitington from New York examining skins of Kamchatka sable

Mr. Galperin, representative of "Canadian Fur" (in the foreground) is seen here examining marten skins, while Mr. Casals from Belgium is more interested in mink. Tastes differ

68,600 solongoi skins and other furs were brought to Leningrad from China. The fur resources of the Mongolian People's Republic were represented by large numbers of marmot, tarbagan, lynx, leopard and other skins.

Amid active bidding the following furs were completely sold out: ermine (to England, France and Italy), kolinsky (to Canada, England and France), mink (to England, France, Italy and the Federal Republic of Germany), stone marten (to England, Italy, France and Switzerland), lynx (to England, Italy, France, and Sweden), leopard (to Switzerland), wolverine (to the USA), Chinese mink (to Canada), Chinese solongoi (to England), muskrat (to France), white fox (to France, England and Sweden), wolf (to the USA, England, Sweden and Canada), tarbagan (to France, Austria and Australia), black fitch (to the USA, England, France and Italy), badger (to France, England and Sweden), white hare (to France) and brown bear (to England for making hats for the soldiers and officers of the Royal Guard).

Other furs were not sold out completely only because V/O "Sojuzpushnina" did not agree to the prices offered by the buyers for furs taken off the auction. V/O "Sojuzpushnina" justly believed that the firms would raise the prices after the auction, in particular at sales in London, which, as a matter of fact, they subsequently did. The following percentages of the total number of skins put up for auction were sold: baum marten — 93.4 per cent, ondatra — 86.3 per cent, squirrel — 98 per cent, sable — 90.2 per cent, marmot — 93.2 per cent. These percentages are very high considering that at auctions held in the USA, England and Canada the number of fur skins sold is usually much smaller.

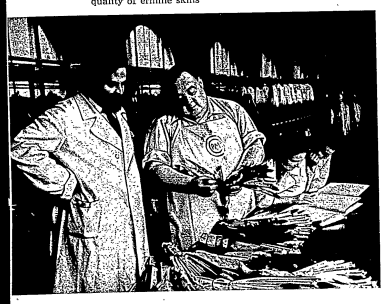
Dyed karakul and metis karakul skins were in very good demand at the 27th Auction. All the 240 thousand skins, including 10 thousand dyed broadtail skins, were sold to European firms.

Amid vigorous bidding 32 thousand skins of raw broadtail (as well as dyed broadtail skins), were sold. American and European firms bought all the grey, sur and dyed karakul skins.

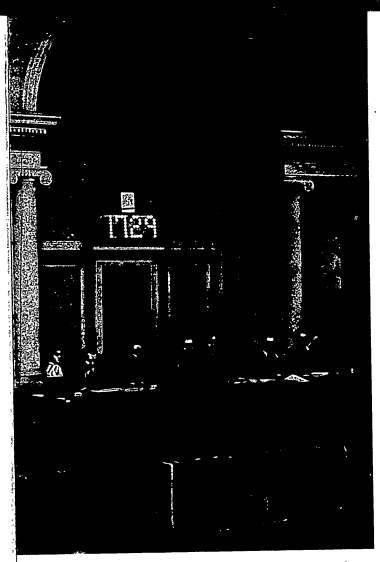
When the auction was over, all the American and British buyers stated that the sales at the 27th Leningrad International Fur Auction, as in previous years, had been very well organized. They highly praised the excellent quality of karakul skins dressed by the Rostokinsky fur factory and of the furs supplied by the hunters of the Far East and Siberia.

Summing up the results of the 27th Leningrad Fur Auction the "Fur Record" wrote in August, 1956:

Here tastes exactly coincide: Mr. Frenkel from Stockholm and Sign. Zippel from Milano are both very pleased with the high quality of ermine skins



"The fur is not bad!" says Mr. Nussenov



Auctioneers carefully watch every sign made by the buyers, even during the most animated bidding

". . . about 120 buyers from seventeen countries (19 countries, in fact, S.E.) were entertained by Sojuzpushnina before the 27th Leningrad annual sales; this was the largest attendance of foreign buyers ever at a Russian fur sale . . . Such an attendance of foreigners is both surprising and significant in view of the state of the world generally and of the fur trade in particular. It is testimony of the importance of the offerings at Leningrad . . ."

It must be taken into consideration that though 119 representatives of foreign fur firms took part in the Sales at the 27th International Fur Auction in Leningrad, purchases were made by 212 firms, because some buyers, especially brokers, bought furs on behalf of firms which had not sent their representatives to Leningrad.

Many buyers had taken part in all the post-war sales, and there were not a few who had attended more than 20 auctions.

Mr. Seidler of England and Mr. U. Frenkel of Sweden had been present at all 27 auctions.

The largest purchases at the 27th Leningrad Auction were made by Mr. Papert, president of an American broker firm, who usually buys large quantities of almost all the furs displayed at the auctions. He is followed by Mr. Vambach (England), Mr. Ariowitch and Mr. M. Strasburg (the latter two representing Anglo-American companies), then come Mr. Seidler, M. B. Solomon and M. K. Guyot (both from France), the Canadian Fur, the British Stanford & Co., Ltd., the Belgian Cazals, the French Revillon Frères (S.A.), the Swiss Meyer et Cie, the British Arthur Bartfeld, the Austrian Dermoutz, the Dutch Heertfur N.V., the Italian Zanini Bruno Fu Spartaco, the West German Torer und Hollender, the Finnish OY Jacob Grunstein A/B and the Swedish Pals-O-Viltskins.

At the present moment V/O "Sojuzpushnina" is taking all measures to ensure that the collection of furs intended for sale at the 28th Auction answer the most exacting demands of the many foreign buyers who have expressed a desire to take part in the sale.

There is every reason to believe that the 28th International Leningrad Fur Auction will be a success.

"Shall we buy broadtail skins or shall we wait and see?" This is what Mr. Ariovitch and Mr. Machutan are discussing during the sale

Fur resources of the Soviet Union

Soviet furs enjoy deserved admiration throughout the world. The variety of species of fur-bearing animals inhabiting the vast territory of the country, the beauty, lightness, long wear and heat resistance of Soviet furs have long since made them very popular on the world market.

Some unique species, such as the sable, which cannot be found in any other country, occur in the Soviet Union, while furs of the Siberian squirrel, white fox, fitch, red fox and ermine have no rivals on the fur market for the fluffiness, colour and high quality of their hair.

In the Ussurian taiga, in the rushes which grow on the banks of rivers in Middle Asia, and in the eastern Transcaucasus lives the tiger, one of the largest representatives of the cat family.

The size of the tiger skin, its dark striped peculiar colouring on the yellowish back and sides and the light coloured belly, and, most of all, the thrill and danger of hunting the "striped robber" make his fur a splendid and desired ornament for the most fashionable dwelling.

No less attractive an ornament is the hide of the brown bear, which inhabits the forest zone from the west borders of our country to the shores of the Okhotsk sea. The brown bear is larger in size than all his kinsmen and just a little smaller than the grey giant grizzly bear of the Rocky Mountains.

Owing to rapacious hunting in pre-revolutionary Russia, many valuable types of fur-bearing animals had been altogether exterminated. Such an extremely valuable animal as the sable has remained in small numbers in some large forests of the Asiatic part of the Soviet Union. Almost completely exterminated were the kalans—sea otters, which are sometimes incorrectly called "Kamchatka beavers". These animals, which are sometimes more than 1.5 m long have a beautiful dark-brown skin with silvery streaks and thick even hair.

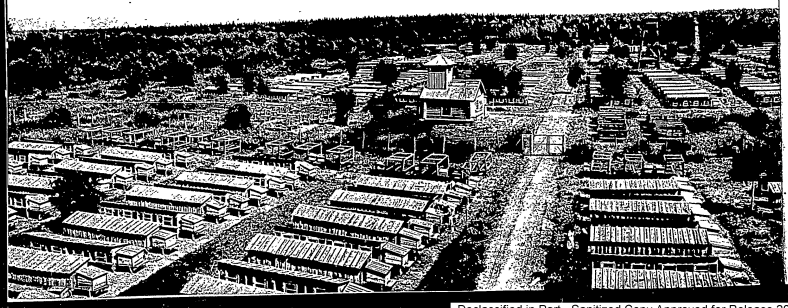
Some other valuable kinds of fur-bearing animals would have been destroyed, if the socialist state had not introduced radical changes into the fur trade. Rapacious fur hunting was abolished and replaced by planned hunting. Measures have been taken for the enlargement of fur resources, the improvement of the hunting technique and the quality of initial skin dressing. Many reservations were created and the hunting of such animals as the sable, the vikhuhol, the sea otter, the river beaver and the marten, whose numbers had greatly decreased, was prohibited for several years. Much work has been done for settling these animals in new places and their acclimatization.

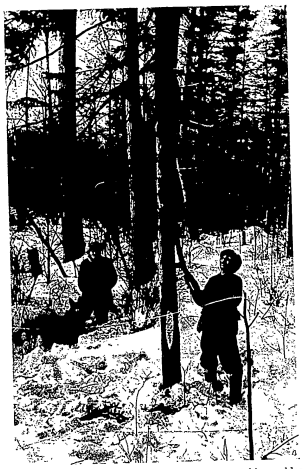
The fur-bearing fauna of the USSR has been enriched on account of animals brought from other countries. These are the ondatra, the nutria, and the mink. The animals have well acclimatized themselves in our country. The ondatra, which was brought to our country 30 years ago, now yields millions of skins.

The production of Soviet fur state farming is well known on the world fur market. Every year V/0 "Sojuzpushnina" increases the sale of state farm bred sable, the quality of which has won a high reputation among specialists, and of state farm bred mink. Silver fox and blue fox skins have been used in the last years mainly on the home market.

At the 28th Leningrad International Fur Auction, as at the previous auctions, the following furs will be offered for sale:

The production of Soviet fur farms is well known on the fur market. This photograph gives the general view of one of the Siberian fur farms where sables, silver and blue foxes are bred





Special reservations have been created for catching sables which are to be settled in different regions of the USSR. The photograph shows hunters from a reservation in Yakutia catching sables with a net

Squirrel

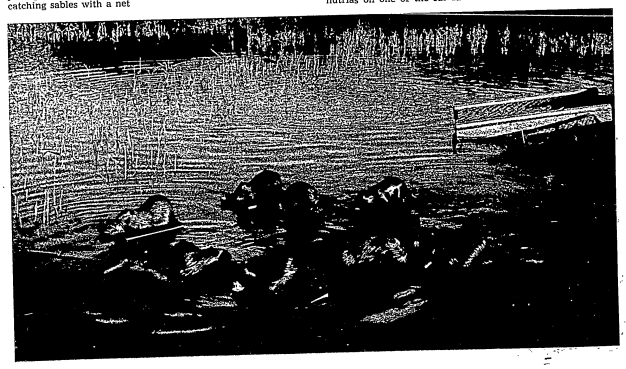
The squirrel is a handsome bluish-grey animal with a fluffy, thick and delicate fur of many different shades, a large bushy tail and ear brushes.

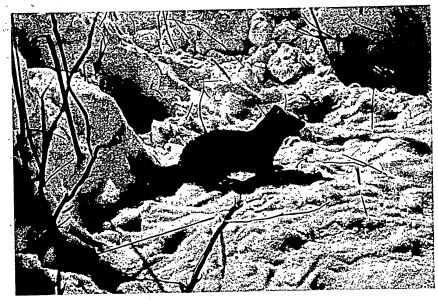
Squirrels inhabit the forest and forest-and-steppe regions of the USSR and vary greatly according to the part of the country in which they live. The Siberian squirrel is characterized by a high percentage of dark coloured skins, a very bushy tail, which is usually black, dark or dark-brown, but is sometimes red or light-brown; the white stripe along the belly of these animals is narrower and shorter than that of the European squirrel.

The most valuable are squirrel furs obtained in Yakutia. They have very fluffy, soft and silky hair, a clean flesh-side and a neatly skinned pelt. These squirrel skins are obtained, as a rule, by experienced hunters, who kill the animal without injuring the skin.

Squirrels of the Amur and Transbaikal regions have larger skins and somewhat rougher hair. The Lena and Enisei squirrels, though a little smaller in size, have long, fluffy and silky hair. Squirrel skins from the forest regions of the Altai and the Tuvin Autonomous Region (Altai and Tuvin squirrels) and from western Siberia are characterized by a lighter colouring and smaller size than those of the east-Siberian species described above. The largest of all is the Teleut squirrel which inhabits the forest-and-steppe part of the Altai region, north-eastern Kazakhstan and the Crimean forests. The Teleut squirrel can be easily distinguished by the

This little South-American animal feels quite at home in the subtropical regions of our country. The photograph shows nutrias on one of the fur farms in Turkmenia





The fur of the sable—the most valuable of fur-bearing animals—is extremely beautiful and durable. The sable lives in the vast forests of Siberia

Skins of baum marten prepared for sale at the Leningrad Auction

fluffy, somewhat rough hair of a light-grey colour, long grey (seldom red) tail and red ear brushes.

During the last years there has been an increasing demand on the external market for light coloured squirrel skins which are used for making fur garments in their natural colour. In this connection the Lena and Ob squirrel skins fetch nearly the same price as the skins of the Yakutsk and Transbaikal breeds.

Squirrel skins are sold both raw and dressed. When dressing the skins, the thickness, length and colour of the hair is considered as well as the condition of the flesh-side. According to these features squirrel skins are cut into separate parts, from which back, rump, throat and head furs are made, as well as belly vintom and ordinary plates.

Squirrel skins, furs and plates are widely used for making fur coats, jackets, collars, capes, hats, etc.

Sable

In the vast Siberian forests, from the Urals to the Pacific Ocean lives the most valuable representative of fur-bearing animals—the sable. It is not to be found in any other country except the USSR.*

Sable furs are exceptionally popular on the market. It is extremely beautiful, durable, light and silky. Sables inhabit different parts of the Soviet Union. They vary in the colour, size and delicacy of hair, and are accordingly divided into several types. As sables in each type differ in colour, they are sorted in conformity with the Soviet standard into seven categories: high golovka, ordinary golovka, high podgolovka, ordinary podgolovka, dark vorotovoi, ordinary vorotovoi and mekhovoi vorotovoi.

The value of sable furs diminishes with the passing of dark colouring into light, i. e. from the high golovka colour to a mekhovoi sable.

The most highly priced sable furs are the Barguzinsk and Kamchatka species which are obtained near the Baikal and in the Kamchatka. The Yakutsk and Amur sables are also very valuable. The biggest sable skins come from the Tiumen, Tomsk and Sverdlovsk regions and are called Tobol sables. They are also very popular among foreign purchasers. No less valuable are sable skins obtained in the region of the middle reaches of the Enisei, which are called Enisei sables. Other types of sable are the Tuvin, Minusinsk and Altai breeds which are produced in small numbers.

Sable furs are used for making highly valuable fur garments—tippets, boas, hats, collars, fur coats and other articles.

Dark sable skins are used in their natural colour, while lighter skins are dyed to imitate dark ones.

* Not counting some hundreds of skins produced in the Chinese People's Republic and Mongolia.

Squirrel plates are in very good demand. They are an excellent material for making various fur garments: coats, jackets, collars, capes, etc.

Marten

There are two kinds of martens: the baum marten and the stone marten.

The baum marten is found in the forest and forest-and-steppe regions of the European part of the Soviet Union, the Caucasus and in some places to the east of the Urals. The skins of the baum marten resemble those of the light coloured sable. The winter fur of the baum marten varies in colour from dark-chestnut with blue underfur to sandy yellow with bluish-grey underfur.

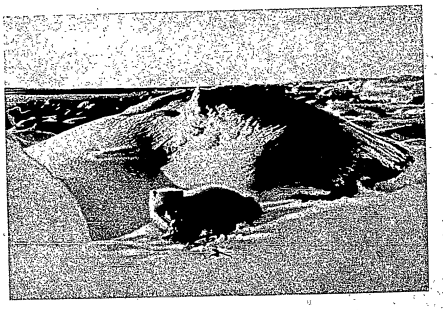
According to the place it inhabits, the baum marten is divided into two groups: Kuban marten and north marten. During the last 6 - 7 years the skins of the north marten have been sold on the market under the names of "Leningrad", "Sarapul" and "Vologodsk" marten.

The stone marten, or as it is also called "the belodushka" lives in the Ukraine, the Crimea, the Caucasus and in the mountain regions of Middle Asia. The life conditions of the stone marten are somewhat different from those of the baum marten. The baum marten lives only in woods and looks for its prey on trees. The stone marten lives in the mountains and finds its prey on the ground. The stone marten has rougher hair than the baum marten and a white patch on its throat instead of the yellow patch on the throat of the baum marten.

The colouring of the stone marten varies from dark-chestnut to chestnut with a brownish shade and light underfur.

According to the region where they are obtained, the skins of the stone marten are divided into two types: the Caucasian and the Middle-Asian.

The marten is always in good demand on the market of the USSR as well as in other countries. It is used for making ladies' jackets, boas, capes and col-



In the Soviet Arctic. A white fox caught in a trap

At the Kazan fur dressing factory

lars. It is also used for trimming ladies' garments. Light baum marten skins are dyed to imitate dark marten.

Ermine

The short, but very thick and silky fur of the ermine is snow-white. The Soviet ermine is of very high quality which surpasses that of the ermine furs supplied by other countries to the world market. The ermine is found almost everywhere on the territory of the Soviet Union. According to the place where they are obtained and the method of initial dressing, ermine skins, in conformity with the Soviet standard, are sorted into 15 types. The most valuable type of ermine is the Ishimsk breed, which is of large size, has a white, strong and elastic fleshside and snow-white, lustrious, thick, long and silky hair. There is also a great demand for the skins of the Berezovsk, Barabinsk and Petropavlovsk breeds.

Snow-white ermine is used in its natural colour for making tippets, capes, jackets, ladies' hats and for trimming ladies' garments. Yellowish skins are dyed in dark colours and used for making various fur garments.

Kolinsky

Kolinsky skins have soft and fluffy hair of bright yellowish-red colour: the tail is somewhat darker than the back.

Kolinsky skins are obtained in various places in Siberia and the Urals and are divided into eight types: Amur, Barabinsk, Tobol, Bashkir, Kuznetzk, Enisei, Yakutsk and Transbaikal.

The Amur and Barabinsk breeds are the biggest and of the highest quality. They are sold on the international market at higher prices than skins coming from other parts of the USSR.

Kolinsky fur is usually dyed in different shades of brown to imitate sable and mink. Dyed Kolinsky skins are used for making fur coats, tippets, jackets, boas and other fur articles.

White Fox

It is very hard to distinguish the white fox when he wears his winter fur. The snow-white fluffy, thick and silky hair blends with the sparkling snow and only three black dots (the two eyes and the tip of the nose) are visible.

The white fox lives in the tundra and forest-and-tundra regions of the USSR from Murmansk to the Chukotka. It feeds on lemmings—small rodents and on carcases of different sea animals thrown out on the shore.

White-fox skins obtained in different parts of the North of our country vary in quality and are therefore divided into six types. The most valued are the skins of the Yakutsk, Enisei and Novosemelski species. The Obdorsk and Pechora breeds are priced lower.

The fur of the white fox is used in its natural colour for making evening wraps, boas, tippets, collars and for trimming coats.

One of those who provides the beautiful furs sold all over the world—famous Nahnaian hunter A. K. Geyker

White fitch

In the USSR the white fitch is found in the European regions, in Siberia, Middle Asia, the forest-and-steppe, the steppe and the desert regions. This ravenous little animal destroys a large number of field mice, suslike, hamsters and water rats and is very useful in agriculture.

In conformity with the Soviet standard there are nine types of white fitch skins, the most valued of which are the Orenburg, Petropavlovsk, Semipalatinsk and Siberia breeds.

Fitch fur is used for making fur coats, boas, jackets and lining for men's winter coats; it is used either in its natural colour or dyed in imitation of valuable furs.

Black fitch

The black fitch is much darker than the white fitch and lives in the European part of the USSR. There is only one type of black fitch skins and they are used for making the same articles for which the white fitch is used.

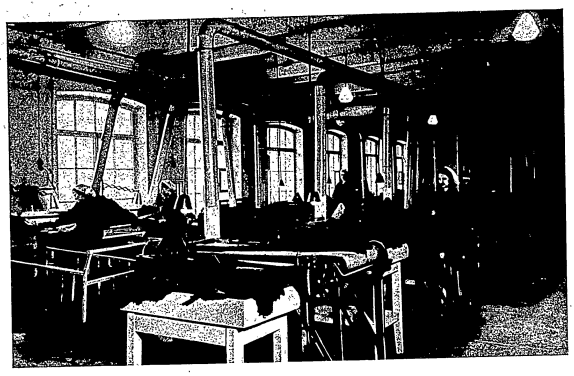
Red fox

The red fox lives in all parts of the Soviet Union. There are very many varieties of red-fox skins, which are differentiated by the degree of fluffiness, silkiness and brightness of colour of the fur. The most valued is the fiery-red Kamchatka fox which has thick fluffy hair. The skins of the Yakutsk, Tobol, Enisei, Lena and other breeds (altogether 38 in number) are also highly priced.

Beginning with 1948 the fur of the red fox, as well as other long hair furs have been in small demand, but at the end of 1956 and in the beginning of 1957 European firms began to take interest in these furs. It may be expected that red fox skins will soon occupy an adequate place in the fur trade of many countries.

At the 28th Leningrad Auction there will be also offered for sale skins of the ondatra, mink, wolverine, lynx, solongoi, badger, wolf and others. The collection of fur goods, owing to its variety, will make it possible to meet fully the requirements of a wide circle of customers, who have expressed their desire to visit the Leningrad Auction in 1957.

How meek and harmless looks the tiger, one of the largest beasts of prey, the terror of the Ussuriisk taiga!



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One of those who provides the beautiful furs sold all over the world—famous Nahnaian hunter A. K. Geyker

White fitch

In the USSR the white fitch is found in the European regions, in Siberia, Middle Asia, the forest-and-steppe, the steppe and the desert regions. This ravenous little animal destroys a large number of field mice, suslike, hamsters and water rats and is very useful in agriculture.

In conformity with the Soviet standard there are nine types of white fitch skins, the most valued of which are the Orenburg, Petropavlovsk, Semipalatinsk and Siberia breeds.

Fitch fur is used for making fur coats, boas, jackets and lining for men's winter coats; it is used either in its natural colour or dyed in imitation of valuable furs.

Black fitch

The black fitch is much darker than the white fitch and lives in the European part of the USSR. There is only one type of black fitch skins and they are used for making the same articles for which the white fitch is used.

Red fox

The red fox lives in all parts of the Soviet Union. There are very many varieties of red-fox skins, which are differentiated by the degree of fluffiness, silkiness and brightness of colour of the fur. The most valued is the fiery-red Kamchatka fox which has thick fluffy hair. The skins of the Yakutsk, Tobol, Enisei, Lena and other breeds (altogether 38 in number) are also highly priced.

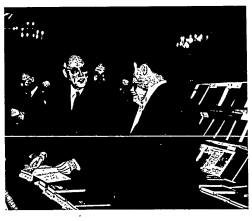
Beginning with 1948 the fur of the red fox, as well as other long hair furs have been in small demand, but at the end of 1956 and in the beginning of 1957 European firms began to take interest in these furs. It may be expected that red fox skins will soon occupy an adequate place in the fur trade of many countries.

At the 28th Leningrad Auction there will be also offered for sale skins of the ondatra, mink, wolverine, lynx, solongoi, badger, wolf and others. The collection of fur goods, owing to its variety, will make it possible to meet fully the requirements of a wide circle of customers, who have expressed their desire to visit the Leningrad Auction in 1957.

How meek and harmless looks the tiger, one of the largest beasts of prey, the terror of the Ussurisk taiga!

Books in eighteen languages exported to 53 countries

The summer of 1956 brought great success to the movable exhibition of Soviet books. The exhibition was open in Paris, Bordeaux and Lyons. The photographs illustrate (top) the demonstration hall of the exhibition of Soviet books in Lyons; (bottom) M. Massenet, the Prefect of Lyons, at the exhibition



Every coming year brings an increase in re-editions of Soviet books abroad. V/O "Mezhdunarodnaja Kniga" in Moscow is concerned with all problems arizing in connection with the republishing of books written by Soviet authors. The photograph illustrates the advertising window of the Norwegian publishing house "Tiden Norsk Forlag" which published the novel "And Quiet Flows the Don" by M. Sholokhov in Norwegian

Books are an important means of cultural exchange among countries. Comparatively cheap and easily transported, they can be sent to different parts of the globe, thus providing diverse information of interest to people of various ages and professions. More than 500 trading firms, libraries and other organizations in 53 countries of the world are regular purchasers of Soviet books.

It is the purpose of the Foreign Languages Publishing House, or Inoizdat, to meet the manifold demands of foreign readers. Staffed with high-class specialists, this big publishing house puts out books in eighteen languages: Arabian, Bengali, Bulgarian, Chinese, Czech, Dutch, English, French, German, Hindi, Italian, Japanese, Korean, Polish, Serbo-Croatian, Spanish, Swedish and Urdu.

Inoizdat is concerned primarily with the quality of translations. The numerous favourable comments received from foreign readers testify to the fact that careful selection of translators has yielded excellent results. Thus, Mr. E. Tempest, of Great Britain, in his letter to Inoizdat writes that their translation of Alexei Tolstoy's "Ordeal" is brilliant. He found it far superior to the one done by Edith Bone and published by Hutchinson's under the title of "The Road to Calvary." No doubt, Mr. Tempest writes, Inoizdat translators are people of rare talent and taste.

Books published by Inoizdat are attractively designed, with tasteful, striking covers and colourful lacquered jackets, bearing a brief annotation and a portrait and biography of the author. Illustrations are by the best contemporary artists.

Inoizdat publications deal with a host of subjects appealing to broad circles of foreign readers. Among them are books for small children and treatises on nuclear physics, monographs on art and anthologies of verse, Russian text-books for foreigners and fiction.

Philosophy, history and political economy are represented this year by works of Marx and Engels, Lenin, Krupskaya and Plekhanov.

Forthcoming publications include many books on science and popular-science by leading Soviet scientists. These deal with topical problems of modern science and engineering, and include "The Eye and the Sun" by Vavilov, "Semi-Conductors and Their Uses" by Ioffe, Glinka's "General Chemistry," "Atomic Engines" by Perelman, "The World of Isotopes," Michurin's "How Plants Can be Acclimatized," Sergiyev's "The Achievements of Soviet Medical Science in the Control of Malaria", "Talleyrand" and "Napoleon" by Tarle, Filatov's "My Path in Science," "Textbook of Physiology" by Sternfeld and "Interplanetary Travels."

Of the 631 titles of books in foreign languages to appear in 1957, 240 are fiction books

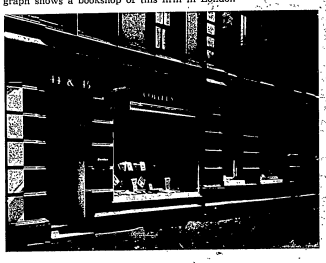
Of the 631 titles of books to appear in 1957, 240 are fiction and children's books. Translations of fiction and children's books enjoy wide popularity among foreign readers—both children and adults. Most of them have been reprinted several times in huge editions. Such books as the Ukrainian folk tale "The Old Man's Mitten," "The Gift," "A Fox in a Fix," Kononov's "New Year's in Sokolniki," Marshak's "A Whiskered Little Fisher," "Different-Sized Wheels" by Suteyev, "Chuk and Gek" and "Timur and His Squad" by Gaidar, Gorky's "The Mother," Makarenko's "The Road to Life," Dostoyevsky's "The Insulted and the Humiliated," etc. are standing favourites with foreign readers.

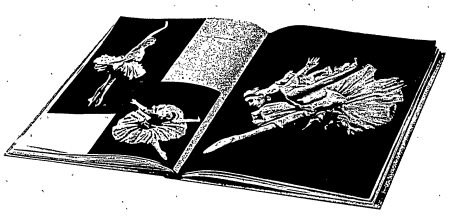
Here is what the Indian literary bulletin "Boster Kohor" of Calcutta, writes in connection with "The Old Man's Mitten":

"Any child would be glad to have this lovely book with pictures. Proof of the striking impression it has created on adults, not to speak of children, is the fact that as many as 65,000 copies were sold in the course of 28 hours at a book bazaar in Calcutta.

This is an unheard-of figure! Even after the 65,000 copies were sold, people kept asking for it."

The Collect's firm is the largest distributor of Soviet literature in Great Britain. The photograph shows a bookshop of this firm in London





The plan of forthcoming publications of the Foreign Languages Publishing House includes many books on art. These attractively designed books with rich illustrations are a great success with foreign readers

People living in Damascus willingly visit the bookshop "Omar Tonbakji" trading Soviet books and magazines

Among works by contemporary Soviet authors to appear this year are Tendryakov's story "Son-in-Law," Mukhtar Auezov's novel "Abai," Alexander Beck's "Talent," books by K. Paustovsky, K. Fedin, A. Upit, etc.

Books on art and sport will also appear in large editions. Lovers of the Russian ballet, whose number, incidentally, is growing daily, will be glad to see an interesting monograph devoted to the Bolshoi Theatre ballet school by Bocharnikov and Galina Ulanova's "The Making of a Ballerina". "Moscow Theatres" by Komissarzhevsky, S. Obraztsov's "My Profession," and Stanislavsky's "My Life in Art"—such is a far from complete list of books on art to appear this year.

Much importance is being attached to publications written specially for foreign readers —these will appear for the first time in the languages of the country for which they have been designed.

Written to meet the specific interests of foreign readers, and dealing as they do with such vital subjects as marriage and the family, public health and education, social insurance, the rights of women, etc., in the Soviet Union, they will doubtlessly find a wide circle of foreign readers. The 1957 plan includes "Forty Years of Public Education in the USSR" by Deineko, "Everything For the Health of Man" by Vinogradov, Gorbatenko's "A National Feat," Zheltovsky's "The Use of Machinery and Electricity in Farming," "40 Years of Soviet Culture" by Kim, "Hunting in the USSR," "Russian Applied Art" by Ilyin, "Students of Moscow University," "Soviet Lawyers," "The Soviet Parliament" and "People's Courts in the USSR" by Sheinin.

The growing number of tourists to the USSR and preparations now underway for the VI World Youth Festival in Moscow call for a large number of guide-books, phrase-books and other reference literature. Publication of Russian language text-books for foreigners, the most popular of which, so far, is the book by Potapova, is being greatly extended.

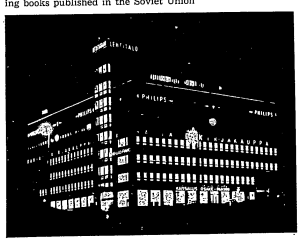
The export of Soviet books translated into foreign languages is handled by the V/O "Mezhdunarodnaja Kniga." This organization concludes contracts with foreign firms for the delivery of Soviet literature.

For the convenience of purchasers, "Mezhdunarodnaja Kniga" puts out annotated catalogues with colourful illustrations of foreign translations now in production. The catalogues are published in all the languages into which the books are translated. In addition, "Mezhdunarodnaja Kniga" also puts out catalogues of books now on hand and extensive advertising material, such as leaflets, picture post-cards, calendars, posters, bookmarks, etc. The procedure of placing orders is very simple. The customer marks the books he wishes in the catalogue and mails it to "Mezhdunarodnaja Kniga" or to the firm handling such transactions in his own country. The last page of each catalogue contains a list of addresses of "Mezhdunarodnaja Kniga" representatives abroad.

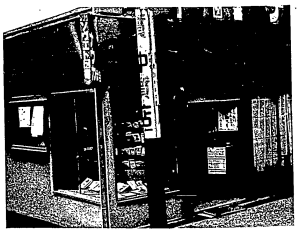
Payment for books is made in the currency of the country from which they are ordered. However, payments may also be made in any other currency convenient to the purchaser. As a rule, books are sold on the firm account. On special request, however, books may also be sent on commission. The purchaser is then allowed a certain discount.

If you care for Russian classical literature, or wish to keep abreast of new works by Soviet writers in excellent translations, if you are interested in the achievements of Soviet science and engineering, music, fine arts, the theatre, physical culture and sport in the USSR and want to have first-hand information about life in the Soviet Union—buy Soviet books translated into foreign languages. A detailed list of books to appear this year, as well as those now available, will be sent to you immediately on request, by "Mezhdunarodnaja Kniga," 32/34 Smolenskaja-Sennaja, Moscow, G-200. Place your orders with the firms representing "Mezhdunarodnaja Kniga" in your country.

The building of "Rautati Kirjakauppa" firm in Helsinki trading books published in the Soviet Union

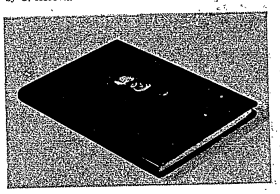


The Japanese firm "Nauka" is a regular purchaser of Soviet books The photograph shows a bookshop of the firm "Nauka" in Tokio



The wonderful books for children translated by the Foreign Languages Publishing House are written and designed with great love for the little readers

Books are illustrated by best artists. On the photograph you see Bazhov's book of Siberian folk tales illustrated by O. Korovin



How about a Motor-boat Trip?

There is nothing more enjoyable than spending your leisure time on the water, especially if you possess some kind of a boat. A row-boat? Well, rowing is a pleasant occupation and a healthy one, too, but it does make you tired and what's more, its speed leaves much to be desired. Or, perhaps, a sailboat? They are such lovely, graceful things, with a touch of the romantic . . . as long as there's a wind. But when the wind dies down, what then?

Then nothing can compare with a pleasure boat equipped with an outboard motor. What fascinating jaunts you can make in it, without a care for the wind or the whims of the weather!

V/O "Sudoimport" offers you its MKC-1 and MK-3 model pleasure motor-boats which are indispensable for all lovers of this sport.

FOLDING MOTOR-BOAT MKC-1

This is an open-cabin two-bench four-seat pleasure boat made of wood and equipped with an outboard motor.

It is assembled in two sections and provided with wheels and trailing devices greatly facilitating its storage and transportation. Mount the folded boat on wheels, couple it to your car and drive it to the shore; there you can easily assemble it and launch it on the water. The boat will also serve as an excellent shelter when spending the night on shore.

Its overall maximum dimensions are (m): length—4.08, when folded—2.15; height of board—0.53; height (when folded and mounted on wheels)—1.47.

Weight (without motor and accessories)—c. 160 kg. Power of motor—10-20 b.h.p. Maximum speed at 10 b.h.p.—25 km/hr.

Accessories include two wheels with suspensions, coupling devices, a pair of oars, a mooring rope, and a tarpaulin cover.

Its handling presents no difficulty whatever. Take your boat from the garage or shed where you keep it, folded and mounted on wheels, and put it behind your car. Fasten the coupling lock of the boat to the spherical surface of the coupling device of the car and secure the joint with the ring. There's also a coupling chain for extra safety. See that the bolt joining the two sections is properly tightened and then you will be ready to start.

Once at the shore all you have to do is to unfold the boat and removing the wheels, launch it on the water. This is also done in a very simple way. Detach the boat from the car, take off the coupling gear and lift the bolt fastening the two sections together. After that open the upper section, put it down on the ground and screw its lower part to the other section (in their upper part both sections are securely joined by loops).

Since the boat is still mounted on wheels you can easily pull it down to the water till its forward end floats; then unscrew the suspensions and remove the wheels, one at a time.

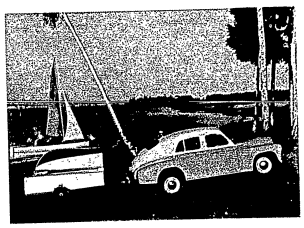
After using the boat, pull it up on the shore and do the same as above in reverse order, before coupling it to the car.

The MKC-1 model is not only very convenient in handling but also durable and elegant.

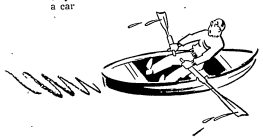
It gains its durability from the best quality wood used for framing and special watertight plywood for straking, all glued together.

Its elegance is one of well-chosen lines enhanced by application of mahogany and ashwood for deck planking and also by carefully nitroenamelled coloured boards and chromium-plated metal parts (bow hook, bollards, etc.).

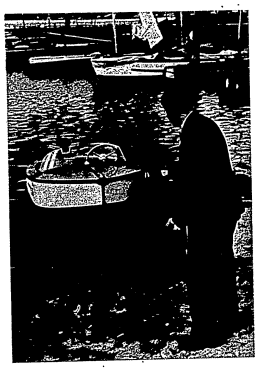
The boat has one more valuable advantage over all the other models of the kind: it is provided with watertight bulkheads which make it practically unsinkable. If one of the two sections springs a leak the other, undamaged, sections will keep the boat afloat for a long time.



It is most enjoyable to spend your leisure time on the water, especially if you possess the model MKC-1 pleasure boat. You need only a few minutes to couple this boat to a car



This family seems to have a nice time in this two-bench four-seat pleasure boat, model MKC-1. Join them and you will see the wonderful features of this boat



Look at this man! He didn't even roll up his sleeves to get his boat on the water

The MK-3 model differs from the MKC-1 in that it does not fold up and is provided with a remote control system.

Although it cannot fold, this second model can be easily brought to the shore on a special trolley which is provided at the request of the customer and bears a winch for pulling the boat out without difficulty.

Thanks to the remote control system you can steer your boat while sitting comfortably in the bow. To achieve this purpose the helm and two small levers connected by cables with the outboard motor are placed before the front seat.

MK-3 is an open-cabin two-bench four-seat pleasure boat made of wood. Its aft section has a lidded opening providing access to the motor and facilitating its suspending, starting or checking. The front seat is protected with a plexiglass visor.

With the model MK-3 pleasure boat you can go anywhere on a nice sunny day. Couple the boat on a truck to your car and the world of pleasure is at your disposal

Overall maximum dimensions of the boat (m): length — 4; width — 1.34; height of board in the middle part — 0.53. Weight (without motor and accessories) — 150 kg. Power of motor — 10—25 b.h.p. Maximum speed at 10 b.h.p.—28 km/hr.

Accessories include an oar, two soft fenders and two hemp ropes 5 m long.

Its outer finish is the same as of the MKC-1 model except that the deck is painted and not mahogany-coated. The seats are covered with artificial leather.

Watertight bulkheads placed in the middle part make it as unsinkable as the MKC-1 model.

For further details on pleasure motorboats write to V/O "Sudoimport". Address: 32/34, Smolenskaja-Seinnaja, Moscow G-200.

Isn't it marvellous to have such a ride! You will have many a good time if you purchase the model MK-3 pleasure boat

CHINAWARE FAIENCE MAJOLICA

The first Russian chinaware factory was built in St. Petersburg in the 40's of the eighteenth century (the first Russian to discover the secret of producing porcelain was V. I. Vinogradov — an outstanding scientist and friend of the great Lomonosov; his essay on the technology of porcelain production was the first research work in the world on the subject). From that time on the production of porcelain in Russia went forward at a steady pace. The skill of old craftsmen was handed down from generation to generation, improving and expanding with time. The best collections of Russian china covering all the stages of porcelain production in this country are to be found in the Leningrad State Hermitage Museum and in the Kuskovo Museum of Ceramics near Moscow.

A great many highly qualified experts and talented artists are engaged in the chinaware industry, their production enjoying great popularity both at home and abroad.

Art lovers and collectors from many countries seek to acquire Russian chinaware articles for their collections. Soviet porcelain has gained an excellent reputation at international fairs.

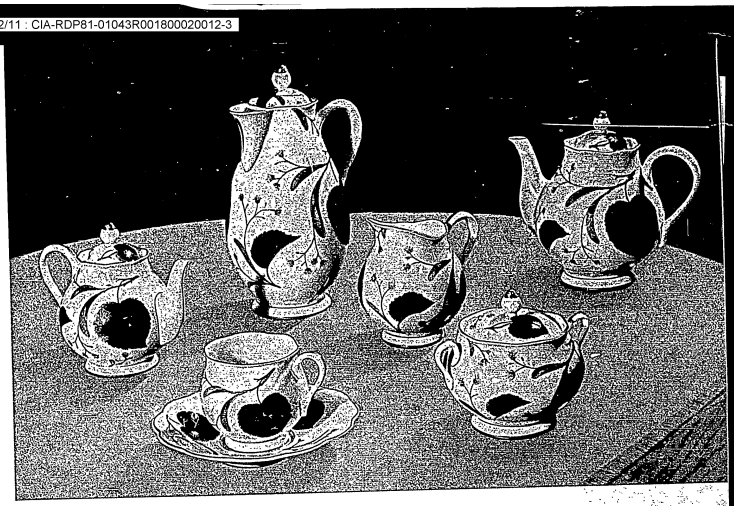
The centre of artistic porcelain production is the Lomonosov Chinaware Factory whose products have won particularly high renown. Its range of goods is extremely wide covering tea and dinner sets, bowls with folk ornament which make lovely gifts, decorative vases, pieces of sculpture modelled on works by well-known artists, and also figures of animals.

All these articles are distinctive for their exquisite design and precision of form; their simple outlines and contours are plastic, full of harmony and profoundly emotional in appeal.

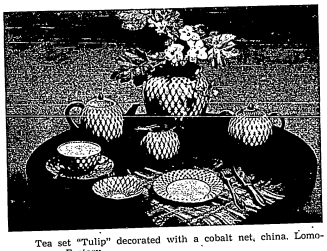
The painting on chinaware and objects of art is rich in decorative element and unique in colouring.

An artist creating beautiful porcelain objects deals with a material which tends to limit the means at his disposal, due to its specific properties, the conventional gamut of bright porcelain colours and also the necessity of adapting the decorative pattern to the shape of the article. The artists working at the chinaware factory cope with this task very successfully. Their patterns are chiefly ornamental in character and rather conventional in design, but without any cloying prettiness. The ornament of the article is organically merged with its shape, the colours are vivid, deep, and transparent; the design, though decorative in character, never becomes obtrusive, never extinguishes the translucent white of porcelain or the lustre of glazing, but accentuates them. The patterns are usually of flowers or branches scattered over the surface of the article or grouped in bouquets, less often in borders. The gilding is very fine and precise in line.

Coffee set "Cornelian cherry", china. Lomonosov Factory. Artist Shchekotikhin



China tea-and-coffee set, pear-shaped, with a hand painted and cobalt glazed design "Limetree flowering". Lomonosov Factory. Sculptress Leporskaya. Artist Lebedinskaya



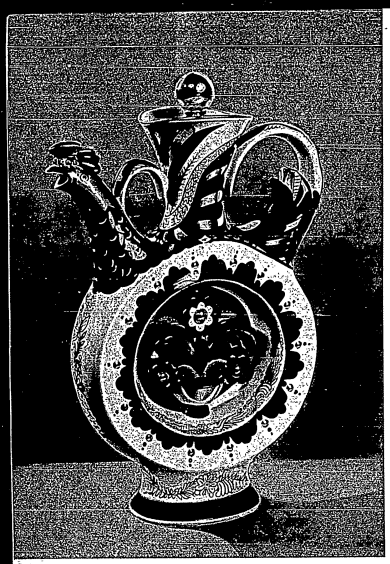
Tea set "Tulip" decorated with a cobalt net, china. Lomonosov Factory

FAIENCE

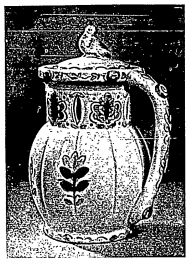
The demand for faience dinner sets increases with each passing year. Using argils and high quality kaolins and employing modern methods of refining and treating the raw material, Soviet factories now produce faience crocks which are in no way inferior to porcelain in whiteness and lustre of glazing.

Among the best are those bearing the trade mark of the Kalinin Faience Factory. Its production covers a wide range, with dinner sets of beautiful and original design predominating. The most interesting productions of recent years are the "empire" and "relief-carved" dinner sets, breakfast sets, plates with carved and smooth rims, decorated with one-tone or multi-colour ornamental designs or with broad bands of soft pastel tints of the engobe type.

Coffee set "Sons-birds", china. Lomonosov Factory. Sculptress Yakovleva. Artist Makh. This set is distinguished for its beautiful oblong form and fine glazed hand-painting.



Decanter "Kumanets", china, with a sound effect. Ukrainian folk ornament. Lomonosov Factory. Artist Krimer



Jug with a secret "Drink but don't drip". Russian folk ornament. Artist Philyanskaya

MAJOLICA

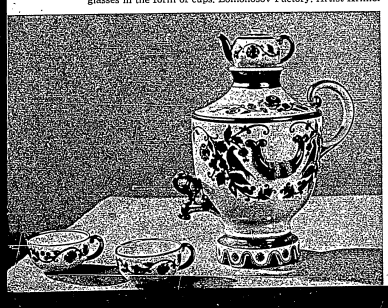
The majolica articles of the Kalinin factory are also extremely interesting in character. Following the best traditions of folk handicraftsmen, the artists of the factory have produced many articles of unique beauty which lend charm to any home.

Vases for flowers, bread and biscuit dishes, vases and plates for fruit and candy, butter dishes, jugs, ash trays, powder boxes and many other articles, designed by V. G. Philyanskaya and G. Y. Alterman, well-known artists working in ceramics, are on sale all over the country.

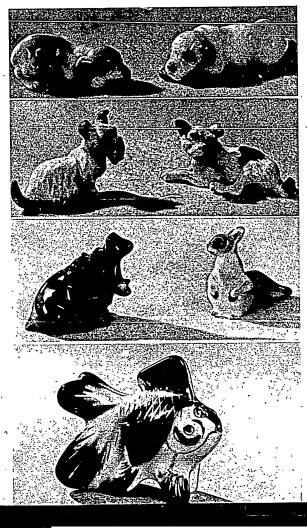
The factory also produces many sculptured faience and majolica groups, distinctive for their original and vivid decorative patterns.

Soviet faience and majolica articles are more and more attracting the attention of foreign buyers by their transclucent whiteness blended with a barely perceptible warm glow, by the lustre of their glaze and the deep richness of the underglaze and glaze colours used in their decoration.

Decanter "Samovarchik", china, with a sound effect. Russian folk ornament. The cork is made as a tea-pot and the small glasses in the form of cups. Lomonosov Factory. Artist Krimer



The animal group of painter Muratov is a success with chinaware fans. Lomonosov Factory



"Mercutio", china sculpture, Lomonosov Factory. Sculptress Mukhina

ORIENTAL POTTERY

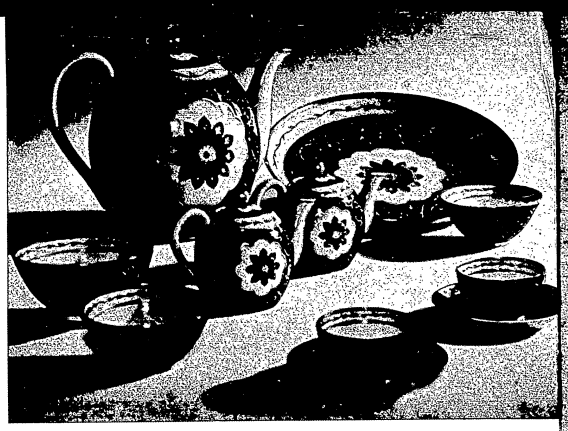
The 17 million people living in the five Soviet Middle-Asian Republics create a big demand for oriental chinaware. The most popular items are ordinary tea-pots and pots for steaming tea, Persian saucres, bowls and "Kise" basins, all decorated with bright patterns in oriental style.

The patterns most frequently met are the so-called "mushel" designs on a coloured or white background, and the gaily coloured, intricate Kashgar prints.

The oriental pottery articles produced by the Pervomaisky Porcelain Factory have won wide popularity. The variety of items it produces and their attractive design meet the tastes and requirements not only of the people living in Soviet Middle Asia

The majolica articles of the Kalinin factory are a success with art lovers. The photograph illustrates a fine majolica vase produced by the factory

China sculpture "Maya Plisetskaya" — ballerina of the Bolshoi Theatre. Sculptor Yanson — Maniser



The most popular items of oriental chinaware are ordinary tea-pots and pots for steaming tea, Persian saucers, bowls and basins, all decorated with bright patterns. Pervomaisky Factory

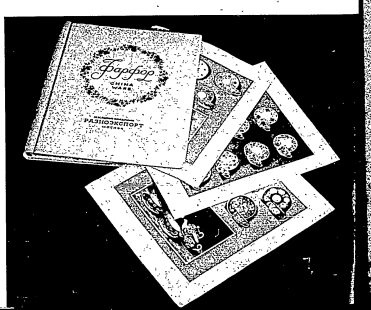
Majolica coffee set. The Kalinin Faience Factory produces such sets in brown, yellow and green-yellow colours

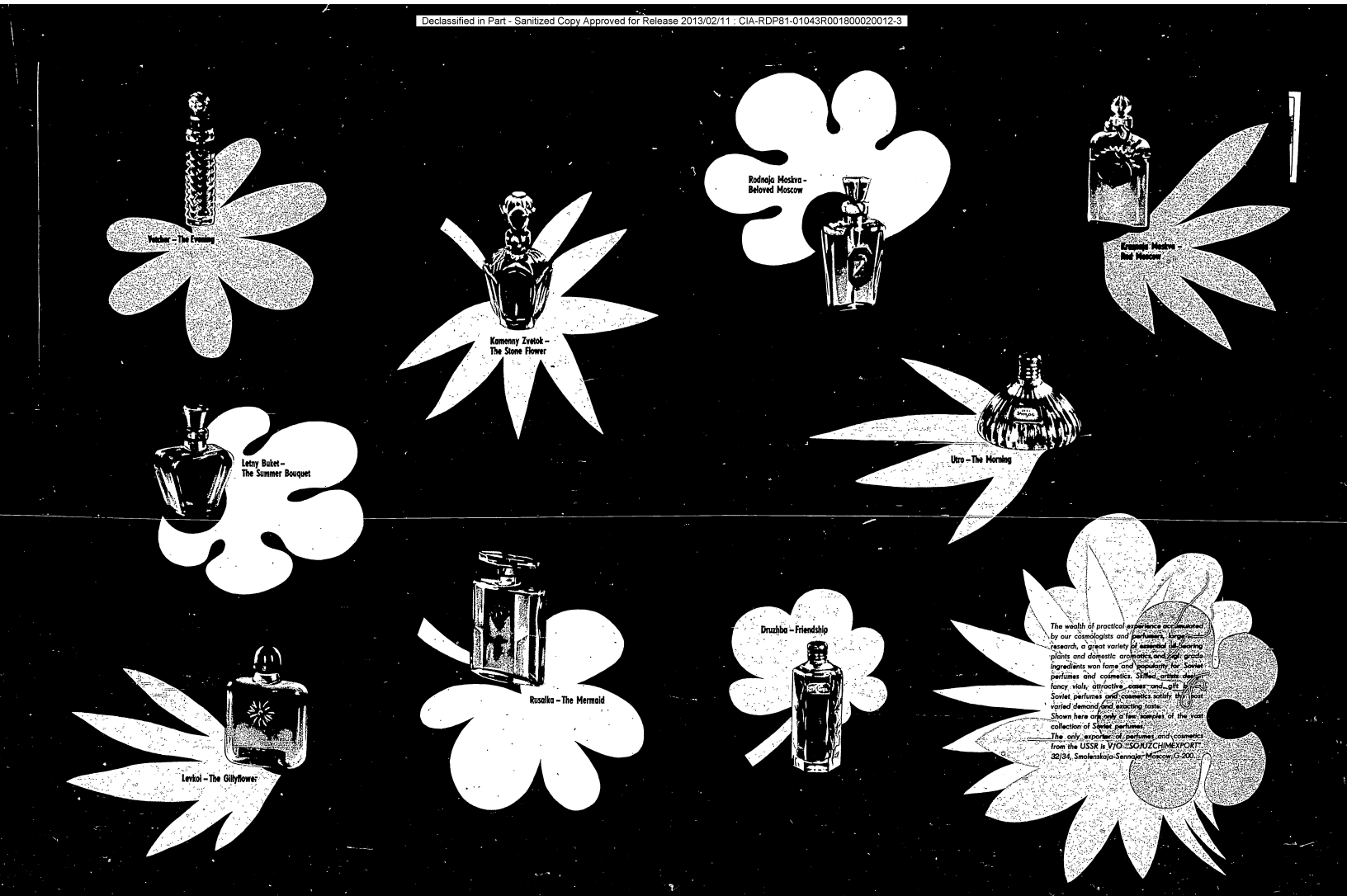
but also of many persons living abroad. These products owe their popularity to their excellent quality and moderate price. Among the principal buyers of Soviet oriental pottery are Iran, Mongolia and Afghanistan.

V/O "Raznoexport" handles the export of porcelain, faience and majolica articles to all countries except Mongolia, Iran, Afghanistan and Yemen. Its address is 5 Kalajevskaja, Moscow.

Export to Mongolia, Iran, Afghanistan and Yemen is handled by V/O "Vostokintorg", 37 Donskaya, Moscow.

A complete catalogue, printed in English, containing over a thousand colour illustrations of Soviet chinaware, can be obtained upon request from V/O "Raznoexport".

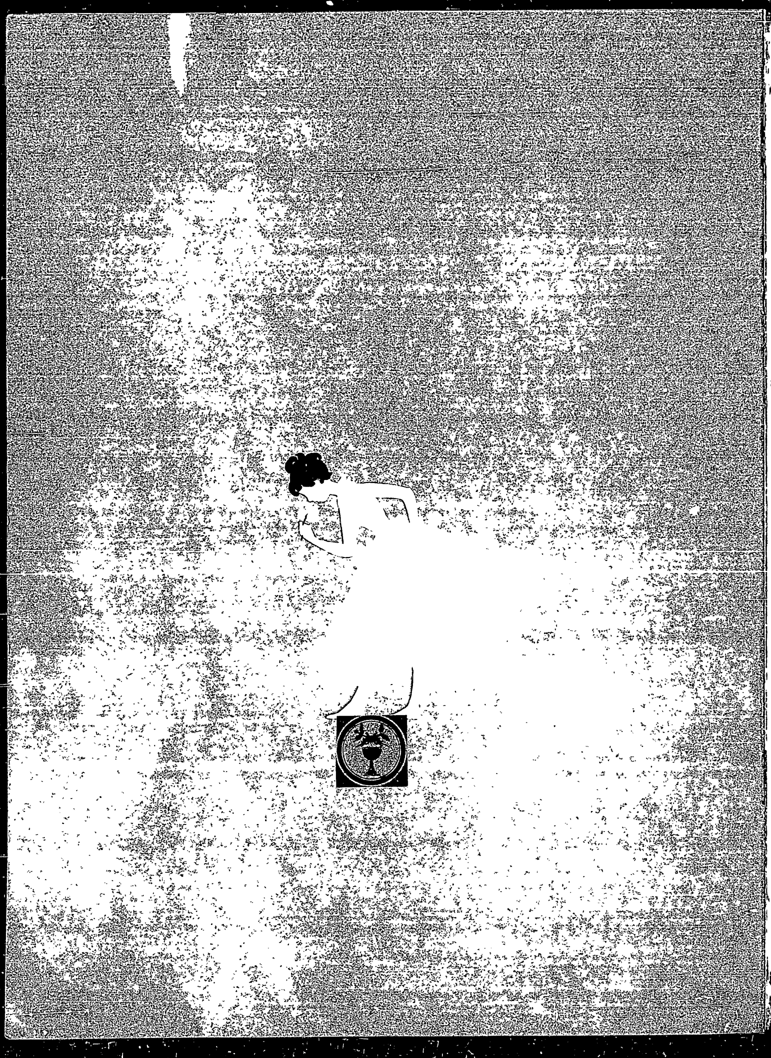


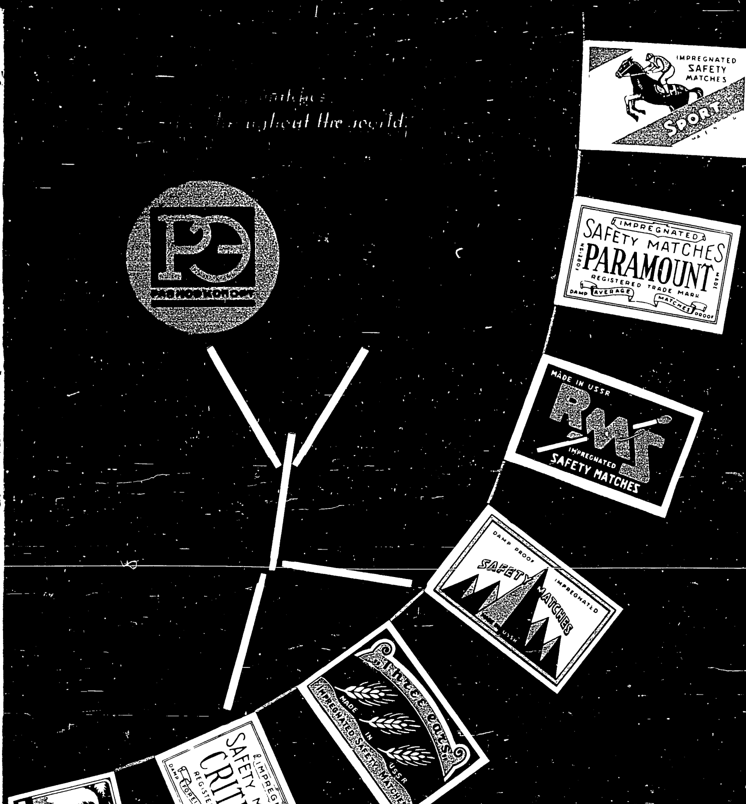


The wealth of practical experience accumulated by our cosmologists and perfumers, long years research, a great variety of essential oil bearing plants and domestic aromatics and high grade ingredients won fame and popularity for Soviet perfumes and cosmetics. Refined, artistic design, fancy vials, attractive cases and gift packing of Soviet perfumes and cosmetics satisfy the most varied demand and exacting taste.

Shown here are only a few samples of the vast collection of Soviet perfumes.

The only exporter of perfumes and cosmetics from the USSR is V/O "SOJUZCHIMEXPORT" 32/34, Smolenskaja-Sennaja, Moscow, G-200.





Soviet matches are made out exclusively of high grade aspen wood, strike quick and easy, are moisture proof and safe in use.

Matches can be delivered with buyer's labels on request.

V/O "RAZNOEXPORT",
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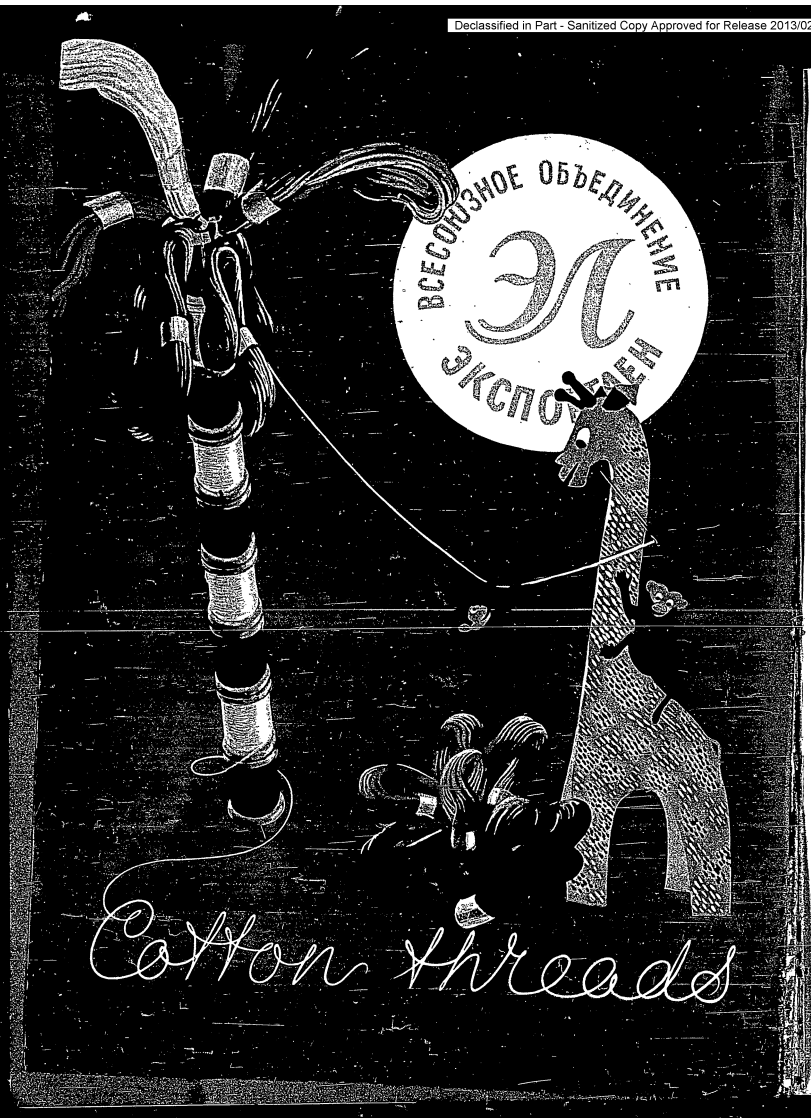

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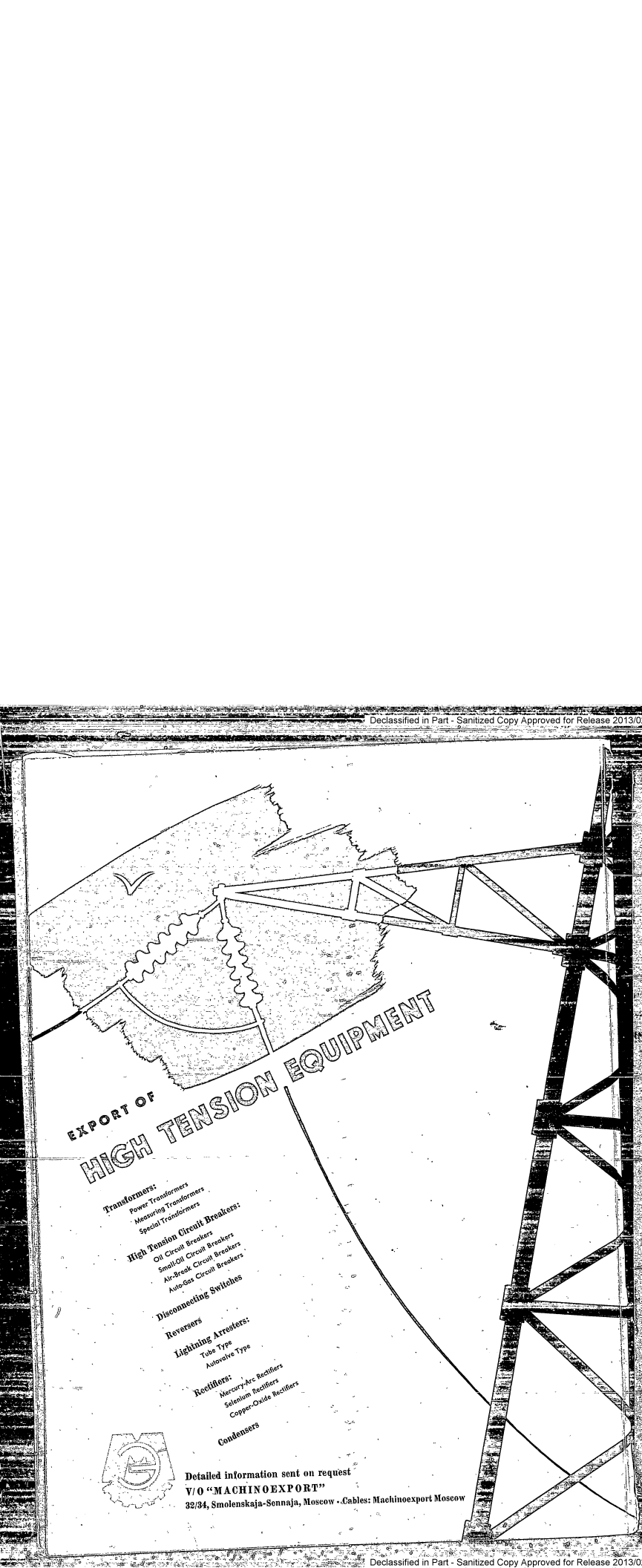

EXPORT OF

HIGH TENSION EQUIPMENT

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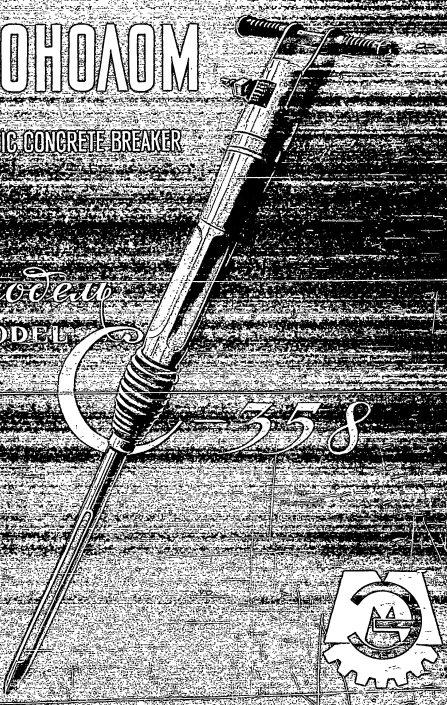
ПНЕВМАТИЧЕСКИЙ БЕТОНОЛОМ

PNEUMATIC CONCRETE BREAKER

модель
MODEL

С-358



ВСЕСОЮЗНОЕ ОБЪЕДИНЕНИЕ

МАШИНОЭКСПОРТ

СССР

ПНЕВМАТИЧЕСКИЙ БЕТОНОЛОМ
МОДЕЛЬ С-358

Пневматический бетонолом модели С-358 предназначен для механизации работ при разработке мерзлых и твердых грунтов, разрушении бетонных и асфальтовых дорожных покрытий, а также железобетонных и каменных сооружений.

Бетонолом может быть также широко использован в горнодобывающей промышленности.

Пневматический бетонолом модели С-358 состоит из цилиндрического ствола с рукояткой, ударного механизма, заключенного в корпусе бетонолома, воздухораспределительного золотникового устройства и сменного рабочего наконечника.

Бетонолом модели С-358 приводится в действие сжатым воздухом, который под давлением 5 *атм* подается к корпусу бетонолома из магистрали (сети) по воздухоподводящему резиновому шлангу.

При производстве работ ударный механизм совершает под действием сжатого воздуха возвратно-поступательное движение в стволе бетонолома и передает его рабочему наконечнику бетонолома, непосредственно производящему разработку или разрушение грунтов или сооружений.

Регулирование подачи воздуха в ствол и возвратно-поступательное перемещение ударного механизма производится посредством специального золотникового устройства. Включение бетонолома происходит при нажатии рабочим на рабочие рукоятки; при этом открывается доступ воздуха из сети в золотниковое устройство бетонолома.

Бетонолом имеет два типа рабочих наконечников: лом и лопату. Наконечники укрепляются в конце ствола в специальной державке и удерживаются от выпадения концевой пружиной.

ОСНОВНЫЕ ДАННЫЕ

Мощность	1,6 *л. с.*
Число ударов в минуту	900
Энергия удара	8 *кгм*
Давление воздуха в сети	5 *атм*
Расход воздуха	1,6 *м³/час*
Воздухоподводящий шланг:	
диаметр в свету	19 *мм*
длина (рекомендуемая)	5 *м*
Габаритные размеры:	
длина (без рабочего наконечника)	710 *мм*
длина (с рабочим наконечником)	990 *мм*
ширина	360 *мм*
Вес (без рабочего наконечника)	17,9 *кг*

ОБЪЕМ ПОСТАВКИ

1. Пневматический бетонолом	1 компл.
2. Комплектующие рабочие наконечники:	
лом	1 шт.
лопата	1 шт.

PNEUMATIC CONCRETE BREAKER
MODEL C-358

Model C-358 pneumatic concrete breaker is designed for mechanisation of operations in working frozen and hard soils, breaking concrete and asphalt pavement coverings and reinforced concrete and stone structures.

The concrete breaker may also be widely utilized in the mine-extraction industry.

Model C-358 pneumatic breaker consists of a cylindrical trunk with a hand lever, an impact gear enclosed in the concrete breaker frame, an air-distributing slide valve installation and a detachable working tip.

The C-358 concrete breaker is started by compressed air supplied under a pressure of 5 *atm. eff.* to its frame from a main through an air rubber hose.

In the process of operation the impact gear under action of compressed air performs in the trunk of the concrete breaker reciprocating movements and transmits force to the concrete breaker's working tip, which directly processes and crushes soils or structures.

A special slide valve device regulates the supply of air to the trunk and reciprocating motion of the impact gear. To start the concrete breaker a worker presses the working hand levers thereby opening air flow from the network to the slide valve device of the concrete breaker.

The concrete breaker has two types of working tips: crow-bar and shovel. The tips are fastened at the end of the trunk to a special holder and are kept from falling out by an end-spring.

SPECIFICATIONS

Capacity	1.6 *h. p.*
Number of impacts per minute	900
Force of one impact	8 *kgm*
Air pressure in network	5 *atm. eff.*
Air consumption	1.6 *m³/hr*
Air hose: diameter (clear)	19 *mm*
length (recommended)	5 *m*
Overall dimensions:	
length (without working tip)	710 *mm*
length (with working tip)	990 *mm*
width	360 *mm*
Weight (without working tip)	17.9 *kg*

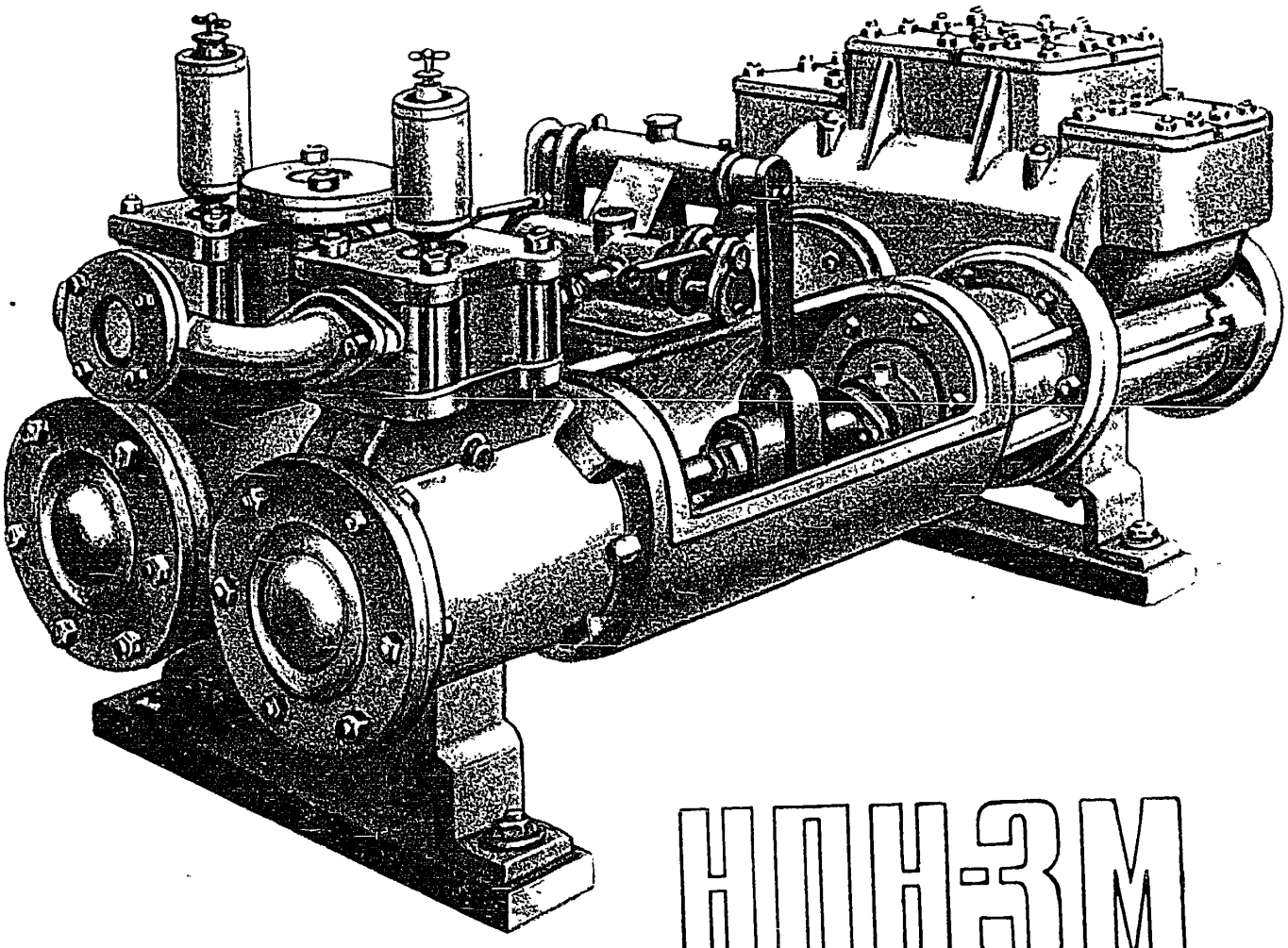
DELIVERY SET

1. Pneumatic concrete breaker	1 set
2. Working tips for the set:	
crow-bar	1 pc.
shovel	1 pc.

Внешторгиздат. Заказ № 01488

VSESOJUZNOJE OBJEDINENIJE
MACHINOEXPORT
USSR MOSCOW

НАСОС
ПАРОВОЙ



НПН-3М

0617

ВСЕСОЮЗНОЕ ОБЪЕДИНЕНИЕ

„МАШИНОЭКСПОРТ"

СССР

МОСКВА

Паровой насос НПН-3М — поршневой, сдвоенный, горизонтальный, двойного действия.

Насос предназначен для перекачки нефти и нефтепродуктов с температурой до 220°.

Гидравлические цилиндры (см. фигуру) отлиты в одном блоке; каждый цилиндр имеет два нагнетательных и два всасывающих клапана; количество всех клапанов — 8.

Клапаны — стальные, дисковые, с конусной опорной поверхностью.

Седла клапанов впрессованы в гнезда клапанной коробки.

Для предотвращения стука клапана применяется пружина, вставленная между клапаном и крышкой.

Поршни гидравлической части насоса имеют чугунные уплотняющие кольца.

В гидравлической части насоса находятся отверстия: для приема продукта — диаметром 100 *мм*, для нагнетания — диаметром 75 *мм*.

При работе пароораспределительного механизма поршни в известный момент (в крайних точках хода) находятся в неподвижном положении, что создает благоприятные условия для плавной посадки клапанов.

Поршни паровой части — чугунные, собираются со штоками на конусах.

Паровые цилиндры отливаются отдельно; на зеркале цилиндров расположены пароораспределительные окна. В каждом цилиндре имеются два впускных и два выпускных окна.

Пароораспределение осуществляется плоскими золотниками, причем золотник каждого цилиндра при помощи рычажного механизма получает движение от штока соседнего цилиндра.

Пароораспределительный механизм монтируют на средниках, соединяющих паровые цилиндры и гидравлическую коробку в одно целое.

Пар подводят через чугунный тройник диаметром 40 *мм*, присоединенный к золотниковой коробке.

Выхлопной тройник диаметром 50 *мм* расположен между паровыми цилиндрами, в средней части золотниковых коробок.

Для монтажа насоса на фундаменте цилиндры собирают на специальных чугунных опорах-ножках.

При монтаже насоса следует предусмотреть, что для более надежной работы перекачку из резервуара нужно вести с напором не ниже 1,5 *м*.

На нагнетательном и пароподводящем трубопроводах установлены манометры, на всасывающем трубопроводе — мановакуумметр. Эти приборы должны быть расположены непосредственно у насоса.

Показания манометров не должны превышать: на пароподводящей трубе или в золотниковой коробке 12 *кг/см²*; в нагнетательном трубопроводе 20 *кг/см²*. Вакуум во всасывающем трубопроводе должен быть равен 0,5 *кг/см²*.

Все движущиеся части насоса смазывают машинным маслом марки Т при помощи ручных масленок.

Золотники и поршни паровой части смазывают маслом марки «Вискозин-3» посредством специальных паровых масленок, установленных на крышке золотниковой коробки.

КРАТКАЯ ТЕХНИЧЕСКАЯ ХАРАКТЕРИСТИКА

Производительность (теоретическая), $м^3$/час	4—8
Давление (наибольшее), *кг/см²*	20
Диаметр цилиндра гидравлической части, *мм*	80
Ход поршня, *мм*	250
Диаметр парового цилиндра, *мм*	190
Давление пара в пароподводящей трубе, *кг/см²*	12
Число двойных ходов в минуту	17—34
Расход пара на 1 *л. с. ч.*, *кг*	35
Мощность насоса, *л. с.*	22
Габаритные размеры, *мм*	
длина	1945
высота	890
ширина	690
Общий вес, *кг*	1130
Комплектность поставки: насос паровой в собранном виде.	

STEAM PUMP

Model НПН-3М

The model НПН-3М steam pump is a piston duplex horizontal pump of the double acting type.

The pump is designed for pumping oil and oil products with a temperature up to 220°C.

The hydraulic cylinders (seet fig.) are cast in a single block; each cylinder has two delivery and two suction valves. There are 8 valves in all. They are steel disc valves with a taper support surface.

The valve seats are press-fitted into the valve box seats.

There is a spring inserted between the valve and cover which precludes knocking of the valve.

The pistons of the pump hydraulic section have cast-iron packing rings.

The pump hydraulic section is provided with hols with a diameter of 100 mm for product suction and a diameter of 75 mm for product delivery.

During operation of the steam distribution mechanism the pistons are at certain moments motionless (at points of extreme stroke); this creates favourable conditions for smoothly fitting the valves.

The pistons of the steam section are made of cast iron and are assembled with rods on cones.

The steam cylinders are cast separately; steam distribution ports are located on the cylinder face Each cylinder has two input and two output ports.

Steam distribution is effected by common valves, the slide valve of each cylinder being actuated by the stem of the neighbouring cylinder by means of the lever mechanism.

The steam distribution mechanism is mounted on the middle sections connecting the steam cylinders with the hydraulic box as one whole.

The steam is fed through a cast-iron tee, with a diameter of 40 mm joined to the slide valve chest.

The 50 mm exhaust tee is located between the steam cylinders in the middle section of the slide valve chests.

In order to mount the pump on the base the cylinders are assembled on special cast-iron leg-supports.

When mounting the pump it should be kept in mind that for reliable pump operation pumping from the tank is to be effected with a head not lower than 1.5 m.

Pressure gauges are installed on the delivery and steam pipe-lines and a vacuum gauge on the suction pipe-line. These instruments should be located directly at the pump.

The gauge readings should not exceed: 12 kg per sq cm on the steam pipe-line or in the slide valve chest and 20 kg per sq. cm in the delivery line The vacuum in the suction pipe-line must be equal to 0.5 kg per sq. cm.

All the moving parts of the pump are lubricated with machine oil grade T by means of an oil can.

The slide valves and pistons of the steam section are lubricated with "Viscosine-3" oil by means of special steam lubricators installed on the slide valve chest cover.

BRIEF SPECIFICATIONS

Output (theoretical), cu m per hr	4—8
Pressure (maximum), kg per sq cm	20
Diameter of the hydraulic section cylinder, mm	80
Piston stroke, mm	250
Diameter of the steam cylinder, mm	190
Steam pressure in the steam pipe-line, kg per sq cm	12
Number of double strokes per mnute	17—34
Steam consumption per h.p /hr, kg	35
Pump power, h. p.	22
Overall dimensions, mm.	
length	1945
height	890
width	690
Total weight, kg	1130

The pump is delivered assembled.

Figure.

The Model НПН-3М Steam Pump: *1*—steam cylinder, *2*—drain cock; *3*—steam inlet tee, *4*—steam lubricator, *5*—slide valve chest, *6*—stem with slide valve; *7*—cooling stuffing box, *8*—hydraulic box, *9*—valve, *10*—delivery line flange; *11*—hydraulic piston; *12*—suction line flange, *13* — support; *14*—condensed steam separation; *15*—hydraulic rod; *16*—steam rod; *17*—steam piston.

VSESOJUZNOJE OBJEDINENIJE

«MACHINOEXPORT»

DAMPFPUMPE

Modell НПН-3М

Die Dampfpumpe НПН-3М ist eine liegende doppeltwirkende Zwillingsmaschine, mit deren Hilfe das Pumpen von Naphtha und Naphthaprodukten bei einer Temperatur bis 220°C erfolgt.

Die hydraulischen Zylinder (s. Figur) werden in einem Block gegossen; jeder Zylinder besitzt zwei Druck- und zwei Saugventile; die Maschine hat im ganzen 8 Scheibenventile aus Stahl mit kegeliger Sitzfläche.

Die Ventilsitze sind in die Bohrungen des Ventilgehäuses eingepreßt.

Zwischen Ventil und Deckel ist eine Feder eingeschaltet, um ein Kopfen des Ventils zu verhüten.

Im hydraulischen Teil der Pumpe sind die Kolben mit gußeisernen Dichtungsringen versehen.

Im hydraulischen Teil sind Öffnungen vorgesehen: eine mit einem Durchmesser von 100 mm — zum Ansaugen der Flüssigkeit und eine mit einem Durchmesser von 75 mm — für die Druckleitung.

Während der Arbeit der Dampfsteuerung, in einem bestimmten Moment (in den Hubendlagen) bleiben die Kolben stehen; dieser kurze Stillstand schafft günstige Bedingungen für ein stoßfreies Schließen der Ventile.

Die Dampfkolben sind aus Gußeisen hergestellt, sie werden auf Ansatzkegeln mit den Kolbenstangen zusammengebaut.

Die Dampfzylinder werden getrennt gegossen. Auf den Zylinderspiegeln sind die Dampfsteuerungsöffnungen angeordnet; jeder Zylinder besitzt je zwei Einlaß- und zwei Auslaßöffnungen.

Die Dampfsteuerung erfolgt durch Flachschieber, dabei wird die Steuerung jedes Zylinders durch die Kolbenstange des benachbarten Zylinders mit Hilfe eines Hebelwerkes in Bewegung gesetzt.

Die Dampfsteuerung wird auf den Mittelstücken montiert, die die Dampfzylinder mit der hydraulischen Kammer verbinden, wodurch ein Ganzes gebildet wird.

Der Dampf wird durch ein gußeisernes T-Stück von ϕ 40 mm zugeführt, das an den Schieberkasten angeschlossen wird.

Das Auspuff-T-Stück mit ϕ 50 mm ist zwischen den Dampfzylindern, im mittleren Teil der Schieberkästen, angeordnet.

Bei Aufstellung der Pumpe auf dem Fundament werden die Zylinder auf besonderen gußeisernen Fußgestellen zusammengebaut.

Beim Montieren der Pumpe ist darauf zu achten, daß zwecks Betriebssicherheit das Pumpen aus dem Behälter bei einer Druckhöhe von mindestens 1,5 m durchgeführt wird.

Auf der Druck- und der Dampfzuleitung sind Manometer, auf der Saugleitung ist ein Manovakuummeter aufgestellt. Diese Apparate sollen unmittelbar neben der Pumpe montiert werden.

Die Angaben der Manometer dürfen auf der Dampfleitung, sowie im Schieberkasten 12 kg/cm², auf der Druckleitung — 20 kg/cm² nicht überschreiten. Das Vakuum in der Saugleitung soll 0,5 kg/cm² betragen.

Die beweglichen Teile der Pumpe werden sämtlich mit Maschinenöl Marke T mittels Ölkannen geschmiert.

Die Schieber und die Kolben des Dampfteiles werden mit Öl Marke „Viskosin-33" geschmiert; sie werden von besonderen auf dem Schieberkastendeckel aufgestellten Dampfschmierapparaten betätigt.

KURZE TECHNISCHE KENNDATEN

Leistung (theoretische), m³/Std.	4—8
Druck (höchster), kg/cm²	20
Zylinderdurchmesser (des hydraulischen Teiles), mm	80
Kolbenhub, mm	250
Dampfzylinderdurchmesser, mm	190
Dampfdruck in der Dampfleitung, kg/cm²	12
Zahl der Doppelhübe in Minute	17—34
Dampfverbrauch, kg/P S /Std	35
Pumpenleistung, P S	22
Außenmaße, mm:	
Länge	1945
Höhe	890
Breite	690
Gesamtgewicht, kg	1130

Komplette Lieferung: Dampfpumpe zusammengebaut.

Figur

Dampfpumpe НПН-3М: *1*—Dampfzylinder; *2*—Ablaßhahn; *3*—Dampfeinlaß-T-Stück, *4*—Dampfschmiervorrichtung; *5*—Schieberkasten, *6*—Schieberstange mit Schieber; *7*—Kühlstopfbüchse, *8*—hydraulisches Gehäuse; *9*—Ventil; *10*—Druckrohrflansch, *11*—hydraulischer Kolben; *12*—Saugrohrflansch; *13*—Stütze; *14*—Kondensatableitung, *15*—hydraulische Kolbenstange; *16*—Dampfkolbenstange, *17*—Dampfkolben

POMPE A VAPEUR

Modèle НПН-3М

Cette machine alternative est constituée par deux pompes accouplées horizontales à double effet.

Elle est destinée à transférer le pétrole brut ou les huiles de pétrole à température ne dépassant pas 220°C.

Les cylindres hydrauliques (voir la Figure) sont venus de fonderie ensemble; chaque cylindre comporte deux clapets de refoulement et deux d'admission, le nombre total de clapets étant ainsi de huit.

Les clapets en forme de disque sont exécutés en acier et ont des portées coniques.

Les sièges des clapets sont emmanchés à la presse dans les logements de la boîte à clapets.

Des ressorts montés entre les couvercles et les clapets préviennent les chocs lors de la descente de ces derniers.

Les pistons de la partie hydraulique de la pompe sont munis de segments en fonte.

Des orifices de ϕ=100 mm et de ϕ=75 mm ménagés dans la partie hydraulique servent respectivement à l'admission et au refoulement des produits véhiculés.

Pendant le fonctionnement des tiroirs à vapeur, la vitesse des pistons s'annule aux points morts, ce qui évite les chocs de clapets contre leurs sièges.

Les pistons à vapeur sont en fonte; ils sont assemblés avec tiges sur cônes.

Les cylindres à vapeur sont coulés séparément. Dans leurs parois internes sont ménagées les lumières de distribution de vapeur. Chaque cylindre comporte deux lumières d'admission et deux d'échappement.

La distribution de la vapeur s'effectue par des tiroirs plats dont chacun est commandé par un système articulé à partir de la tige de piston du cylindre voisin.

La distribution de vapeur est montée sur les carters qui réunissent les cylindres à vapeur et la partie hydraulique.

La vapeur est amenée par un té en fonte de 40 mm de diamètre boulonné sur la boîte à tiroirs.

Le té d'échappement de 50 mm de diamètre est disposé entre les cylindres à vapeur dans la partie moyenne des boîtes à tiroirs.

Pour le montage de la pompe sur sa fondation on assemble ses cylindres sur des supports en fonte spéciaux.

Il faut bien avoir en vue que pour assurer à la pompe un fonctionnement sans à coups, cette dernière doit travailler avec une pression à l'admission d'au moins 1,5 m de liquide.

Des manomètres sont montés sur le conduit de refoulement et sur celui d'amenée de vapeur. Le conduit d'aspiration est doté d'un manovacuomètre. Ces appareils doivent se trouver dans le voisinage immédiat de la pompe.

Les indications des manomètres ne doivent pas dépasser: pour le conduit d'amenée de vapeur ou dans la boîte à tiroirs 12 kg/cm²; pour le conduit de refoulement 20 kg/cm². Le vide dans le conduit d'aspiration doit être de 0,5 kg/cm².

Toutes les pièces mobiles de la pompe sont lubrifiées (par graisseurs à main) à l'huile à machines marque soviétique T.

Les tiroirs et les pistons de la partie vapeur sont lubrifiés à l'huile marque soviétique «Viscosine-3» par des graisseurs spéciaux à vapeur montés sur le couvercle de la boîte à tiroirs.

CARACTÉRISTIQUES TECHNIQUES SOMMAIRES

Débit (théorique), m³/h	4 à 8
Pression de refoulement (maximum), kg/cm²	20
Alésage du cylindre hydraulique, mm	80
Course du piston, mm	250
Alésage du cylindre vapeur, mm	190
Pression de la vapeur dans le conduit d'amenée, kg/cm²	12
Nombre de courses doubles par minute	17 à 34
Consommation de vapeur au cheval/heure, kg	35
Puissance de la pompe, C.V.	22
Cotes d'encombrement, mm:	
longueur	1945
hauteur	890
largeur	690
Poids total, kg	1130

Lot de livraison: une pompe à vapeur montée.

Figure.

Pompe à vapeur НПН-3М: *1*—cylindre à vapeur, *2*—robinet de vidange, *3*—té d'admission de vapeur, *4*—graisseur à vapeur; *5*—boîte à tiroirs, *6*—tige avec tiroir, *7*—presse-étoupe de refroidissement, *8*—carter des cylindres hydrauliques, *9*—clapet; *10*—bride du conduit de refoulement; *11*—piston hydraulique; *12*—bride du conduit d'aspiration; *13*—support; *14*—purge de condensat; *15*—tige du piston hydraulique, *16*—tige du piston à vapeur; *17*—piston à vapeur.

Внешторгиздат. Заказ № 01123/604.

DAMPFPUMPE

Modell НПН-3М

Die Dampfpumpe НПН-3М ist eine liegende doppeltwirkende Zwillingsmaschine, mit deren Hilfe das Pumpen von Naphtha und Naphthaprodukten bei einer Temperatur bis 220°C erfolgt.

Die hydraulischen Zylinder (s. Figur) werden in einem Block gegossen; jeder Zylinder besitzt zwei Druck- und zwei Saugventile; die Maschine hat im ganzen 8 Scheibenventile aus Stahl mit kegeliger Sitzfläche.

Die Ventilsitze sind in die Bohrungen des Ventilgehäuses eingepresst.

Zwischen Ventil und Deckel ist eine Feder eingeschaltet, um ein Kopfen des Ventils zu verhüten.

Im hydraulischen Teil der Pumpe sind die Kolben mit gußeisernen Dichtungsringen versehen.

Im hydraulischen Teil sind Öffnungen vorgesehen: eine mit einem Durchmesser von 100 mm — zum Ansaugen der Flüssigkeit und eine mit einem Durchmesser von 75 mm — für die Druckleitung.

Während der Arbeit der Dampfsteuerung, in einem bestimmten Moment (in den Hubendlagen) bleiben die Kolben stehen; dieser kurze Stillstand schafft günstige Bedingungen für ein stoßfreies Schließen der Ventile.

Die Dampfkolben sind aus Gußeisen hergestellt, sie werden auf Ansatzkegeln mit den Kolbenstangen zusammengebaut.

Die Dampfzylinder werden getrennt gegossen. Auf den Zylinderspiegeln sind die Dampfsteuerungsöffnungen angeordnet; jeder Zylinder besitzt je zwei Einlaß- und zwei Auslaßöffnungen.

Die Dampfsteuerung erfolgt durch Flachschieber, dabei wird die Steuerung jedes Zylinders durch die Kolbenstange des benachbarten Zylinders mit Hilfe eines Hebelwerkes in Bewegung gesetzt.

Die Dampfsteuerung wird auf den Mittelstücken montiert, die die Dampfzylinder mit der hydraulischen Kammer verbinden, wodurch ein Ganzes gebildet wird.

Der Dampf wird durch ein gußeisernes T-Stück von ⌀ 40 mm zugeführt, das an den Schieberkasten angeschlossen wird.

Das Auspuff-T-Stück mit ⌀ 50 mm ist zwischen den Dampfzylindern, im mittleren Teil der Schieberkästen, angeordnet.

Bei Aufstellung der Pumpe auf dem Fundament werden die Zylinder auf besonderen gußeisernen Fußgestellen zusammengebaut.

Beim Montieren der Pumpe ist darauf zu achten, daß zwecks Betriebssicherheit das Pumpen aus dem Behälter bei einer Druckhöhe von mindestens 1,5 m durchgeführt wird

Auf der Druck- und der Dampfzuleitung sind Manometer, auf der Saugleitung ist ein Manovakuummeter aufgestellt. Diese Apparate sollen unmittelbar neben der Pumpe montiert werden.

Die Angaben der Manometer dürfen auf der Dampfleitung, sowie im Schieberkasten 12 kg/cm², auf der Druckleitung — 20 kg/cm² nicht überschreiten. Das Vakuum in der Saugleitung soll 0,5 kg/cm² betragen.

Die beweglichen Teile der Pumpe werden sämtlich mit Maschinenöl Marke T mittels Ölkannen geschmiert.

Die Schieber und die Kolben des Dampfteiles werden mit Öl Marke „Viskosin-33" geschmiert; sie werden von besonderen auf dem Schieberkastendeckel aufgestellten Dampfschmierapparaten betätigt.

KURZE TECHNISCHE KENNDATEN

Leisiung (theoretische), m³/Std.	4—8
Druck (höchster), kg/cm²	20
Zylinderdurchmesser (des hydraul-schen Teiles), mm	80
Kolbenhub, mm	250
Dampfzylinderdurchmesser, mm	190
Dampfdruck in der Dampfleitung, kg/cm²	12
Zahl der Doppelhübe in Minute	17—34
Dampfverbrauch, kg/P.S /Std.	35
Pumpenleistung, P.S.	22
Außenmaße, mm:	
Länge	1945
Höhe	890
Breite	690
Gesamtgewicht, kg	1130

Komplette Lieferung: Dampfpumpe zusammengebaut.

Figur.

Dampfpumpe НПН-3М: *1*—Dampfzylinder; *2*—Ablaßhahn, *3*—Dampfeinlaß-T-Stück, *4*—Dampfschmiervorrichtung, *5*—Schieberkasten; *6*—Schieberstange mit Schieber, *7*—Kühlstopfbüchse; *8*—hydraulisches Gehäuse; *9*—Ventil; *10*—Druckrohrflansch; *11*—hydraulischer Kolben; *12*—Saugrohrflansch, *13*—Stütze; *14*—Kondensatableitung, *15*—hydraulische Kolbenstange; *16*—Dampfkolbenstange, *17*—Dampfkolben.

POMPE A VAPEUR

Modèle НПН-3М

Cette machine alternative est constituée par deux pompes accouplées horizontales à double effet.

Elle est destinée à transférer le pétrole brut ou les huiles de pétrole à température ne dépassant pas 220°C.

Les cylindres hydrauliques (voir la Figure) sont venus de fonderie ensemble; chaque cylindre comporte deux clapets de refoulement et deux d'admission, le nombre total de clapets étant ainsi de huit.

Les clapets en forme de disque sont exécutés en acier et ont des portées coniques.

Les sièges des clapets sont emmanchés à la presse dans les logements de la boite à clapets.

Des ressorts montés entre les couvercles et les clapets préviennent les chocs lors de la descente de ces derniers.

Les pistons de la partie hydraulique de la pompe sont munis de segments en fonte.

Des orifices de ⌀=100 mm et de ⌀=75 mm ménagés dans la partie hydraulique servent respectivement à l'admission et au refoulement des produits véhiculés.

Pendant le fonctionnement des tiroirs à vapeur, la vitesse des pistons s'annule aux points morts, ce qui évite les chocs de clapets contre leurs sièges.

Les pistons à vapeur sont en fonte; ils sont assemblés avec tiges sur cônes.

Les cylindres à vapeur sont coulés séparément. Dans leurs parois internes sont ménagées les lumières de distribution de vapeur. Chaque cylindre comporte deux lumières d'admission et deux d'échappement.

La distribution de la vapeur s'effectue par des tiroirs plats dont chacun est commandé par un système articulé à partir de la tige de piston du cylindre voisin.

La distribution de vapeur est montée sur les carters qui réunissent les cylindres à vapeur et la partie hydraulique.

La vapeur est amenée par un té en fonte de 40 mm de diamètre boulonné sur la boite à tiroirs.

Le té d'échappement de 50 mm de diamètre est disposé entre les cylindres à vapeur dans la partie moyenne des boites à tiroirs.

Pour le montage de la pompe sur sa fondation on assemble ses cylindres sur des supports en fonte spéciaux.

Il faut bien avoir en vue que pour assurer à la pompe un fonctionnement sans à coups, cette dernière doit travailler avec une pression à l'admission d'au moins 1,5 m de liquide.

Des manomètres sont montés sur le conduit de refoulement et sur celui d'amenée de vapeur. Le conduit d'aspiration est doté d'un manovacuomètre. Ces appareils doivent se trouver dans le voisinage immédiat de la pompe.

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Toutes les pièces mobiles de la pompe sont lubrifiées (par graisseurs à main) à l'huile à machines marque soviétique T.

Les tiroirs et les pistons de la partie vapeur sont lubrifiés à l'huile marque soviétique «Viscosine-3» par des graisseurs spéciaux à vapeur montés sur le couvercle de la boite à tiroirs.

CARACTÉRISTIQUES TECHNIQUES SOMMAIRES

Débit (théorique), m³/h	4 à 8
Pression de refoulement (maximum), kg/cm²	20
Alésage du cylindre hydraulique, mm	250
Course du piston, mm	190
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Lot de livraison: une pompe à vapeur montée.

Figure.

Pompe à vapeur НПН-3М: *1*—cylindre à vapeur, *2*—robinet de vidange, *3*—té d'admission de vapeur; *4*—graisseur à vapeur, *5*—boite à tiroirs; *6*—tige avec tiroir; *7*—presse-étoupe de refroidissement; *8*—carter des cylindres hydrauliques; *9*—clapet, *10*—bride du conduit de refoulement; *11*—piston hydraulique; *12*—bride du conduit d'aspiration, *13*—support; *14*—purge de condensat; *15*—tige du piston hydraulique, *16*—tige du piston à vapeur; *17*—piston à vapeur.

Внешторгиздат. Заказ № 01123/604.

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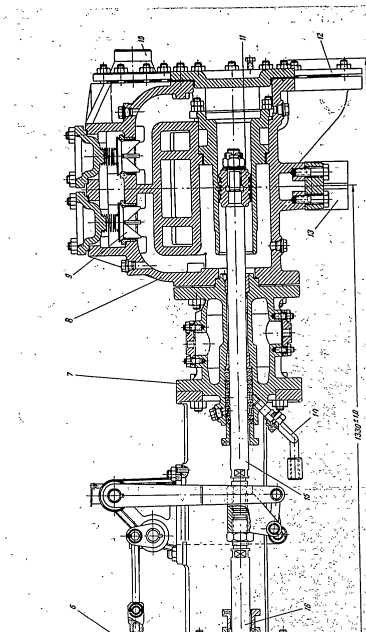

Паровой насос НПН-3М.

1 — паровой цилиндр; 2 — спускной краник; 3 — паровпускной тройник; 4 — паровая масленка; 5 — золотниковая коробка; 6 — шток с золотником; 7 — охлаждающий сальник; 8 — гидравлическая коробка; 9 — клапан; 10 — фланец нагнетательной линии; 11 — гидравлический поршень; 12 — фланец всасывающей линии; 13 — опора; 14 — отвод конденсата; 15 — гидравлический шток; 16 — паровой шток; 17 — паровой поршень.

НПН-3М

Издано в Советском Союзе

ТЕЛЕГРАФНЫЙ АДРЕС:
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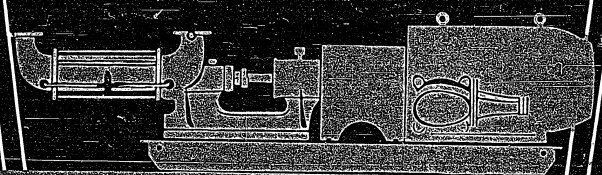

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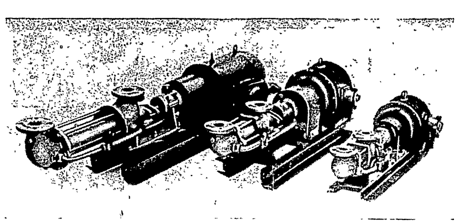


Винтовые перекачные насосы ВНМ18-2, ВН18×30 и ВН3-5 применяются для откачки загрязненной воды из зумпфов и водосборников при проведении горизонтальных выработок, уклонов и наклонных стволов шахт, а также в установках для осушения песков.

Насосы, благодаря малым размерам и самовсасывающей способности, удобны для водоотлива при производстве различных строительных работ и могут быть применены также для перекачки жидкостей, обладающих большой вязкостью.

Насос ВНМ18-2 состоит из опорной и соединенной с электродвигателем упругой муфтой рабочей частей, смонтированных на общей раме. Рабочая часть представляет собой резиновую обойму, в которой планетарно вращается стальной винт. Вращение винту от электродвигателя передается через карданный вал. Насосы ВН комплектуются взрывобезопасными электродвигателями, что дает возможность использовать их в шахтах, опасных по газу.

ЭКСПЛУАТАЦИЯ НАСОСОВ

При использовании насосов в качестве самовсасывающих достаточно перед первым пуском залить всасывающий корпус водой. В дальнейшем заливку производить не обязательно, так как, благодаря перепускному устройству, во всасывающем корпусе всегда будет находиться вода.

При продолжительных остановках воду из насоса следует спускать через спускную пробку во всасывающем корпусе.

ИЗДАН[illegible] СОЮЗЕ

Регулирование напора и подачи рекомендуется производить устанавливаемым на напорном трубопроводе вентилем, а также краном на перепускном устройстве.

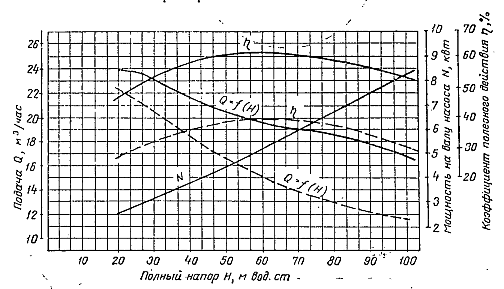
После перекачки сильно загрязненных вод, глинистых растворов и др. насосную часть следует промыть.

Винтовые насосы очень просты в сборке и разборке, неприхотливы в эксплуатации.

ТЕХНИЧЕСКАЯ ХАРАКТЕРИСТИКА

Модель насоса	Подача, Q		Полный напор H, м вод. ст.	Число оборотов в минуту, n	Мощность электродвигателя N, квт	Тип электродвигателя	К. п. д. насоса η, %	Допустимая вакуумметрическая высота всасывания, м	Вес, кг		Габариты, мм
	м³/час	л/сек							без электродвигателя	с электродвигателем	
ВНМ18-2	18	5	80	1460	8	МА-142-2/4	55	8	137	297	552 × 480 × 1990
ВН18×30	18	5	30	1460	4,2	ТАГ-32/4	55	8	94	200	400 × 483 × 1340
ВН3-5	5	1,39	30	1460	1,6	ТАГ-22/4	55	6	43	100	348 × 380 × 1040

Характеристика насоса ВНМ18-2



ОБЪЕМ ПОСТАВКИ

Насос поставляется на раме в сборе с электродвигателем. В комплект запасных частей входят: карданный вал — 1 шт.; рабочая часть — 1 компл.; защитная втулка — 1 шт.; кольца — 4 шт.

Всесоюзное объединение

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SCREW PUMPS BH

The screw pumping-over Type BHM-18-2, BH 18×30 and BH3-5 Pumps are widely employed in the coal industry, the former being employed in other branches.

In the coal industry these models are used for dewatering of sumps and drainages in horizontal drifts and inclined shafts.

The BHM 18-2 Type pump consists of the working part and the supporting part mounted on a common bedplate connected with the electromotor by means of a resilient clutch. The working part which is a rubber ring accommodates a rotating steel screw. The rotating screw is driven by a cardan shaft.

Electromotors which are supplied to the pumps are explosionproof and therefore may be used in gaseous coal mines.

Due to relatively small dimensions and self-priming ability the pumps are very suitable for various construction works as for example digging of ditches.

The pumps of the Type BH were successfully employed for dewatering of sands in coal mines.

They also can be used for pumping over viscous liquids.

Pump model	Capacity Q		Total head H, m	Speed n, r.p.m.	Electromotor power, kW	Electromotor Type	Pump efficiency η, %	Allowable vacuum suction lift, m	Pump weight		Pump dimensions, mm
	m³ per hr	litres per sec.							without electromotor	with electromotor	
BH \ 18—2	18	5	80	1460	8	MA 142-2/4	55	8	137	295	552×480×1990
BH 18×30	18,6	5	30	1460	4,2	TAΓ 32/4	55	8	94	200	400×483×1340
BH3—5	5	1,39	60	1460	1,6	TAΓ 22/4	65	6	43	100	348×380×1040

Operation of the pump

When used self-priming, the pumps need to be primed only once before starting. Later on an additional priming is not necessary as due to by-passing mechanism water will always be present in a sucking body.

When the pump is out of operation for a long time water should be removed out of a sucking body through an outlet plug.

Regulation of head and capacity is recommended to carry on by means of a valve mounted on a head tube and a faucet mounted on a by-passing mechanism.

After pumping over of dirty and clay solids the pumping part should be washed.

Screw pumps can be easily assembled and dismantled and do not require constant care during operation.

Contents of a supply

1. The pump supplied with an electromotor on the frame . . . 1 piece
2. A complete set of spare parts:

A working part	1 piece
A protecting bushing	1 piece
Rings	4 pieces
A cardan shaft	1 piece

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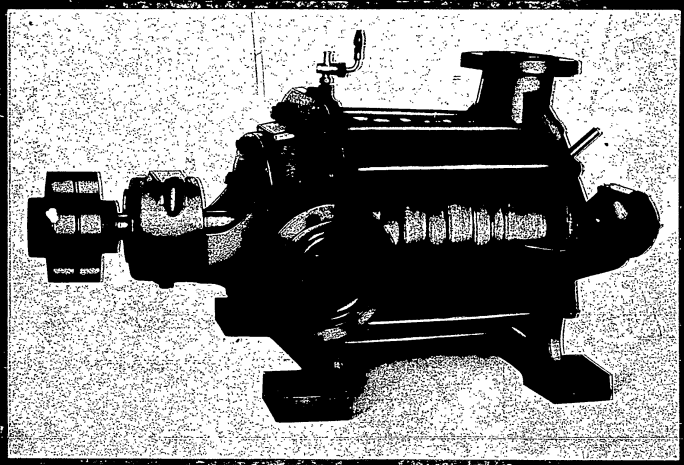


ШАХТНЫЙ ЦЕНТРОБЕЖНЫЙ НАСОС «КОМСОМОЛЕЦ»

ШАХТНЫЙ ЦЕНТРОБЕЖНЫЙ НАСОС «КОМСОМОЛЕЦ»

Насос «Комсомолец» (КСМ) предназначен для работы на водоотливе угольных шахт. Кроме того, этот насос применяется и в ряде других отраслей промышленности (нефтяной, рудной, строительной, на транспорте и др.).

Нормальная температура перекачиваемой насосом жидкости 20—25°. Верхний предел температуры перекачиваемой жидкости 40°.

Насос состоит из ротора, подшипников с кольцевой смазкой и вставными вкладышами, направляющего аппарата, крышки всасывания и крышки нагнетания.

Принцип действия насоса:

— из всасывающего трубопровода вода поступает в крышку всасывания насоса, а затем в первое рабочее колесо;

— при выходе из рабочего колеса вода поступает в каналы направляющего аппарата и затем по перепускному каналу — во второе рабочее колесо с давлением, равным давлению первой ступени; в третье рабочее колесо вода поступает с увеличенным давлением, созданным вторым колесом, и т. д.;

— выйдя из последнего рабочего колеса, вода проходит через направляющий аппарат в крышку нагнетания, откуда поступает в нагнетательный трубопровод.

Насос приводится в движение от асинхронного двигателя трехфазного тока.

ТЕХНИЧЕСКАЯ ХАРАКТЕРИСТИКА

Насосы КСМ-30, КСМ-50, КСМ-70

Производительность, $м^3/час$ 30, 50, 70
Напор на одно колесо, $м$ 25
Скорость вращения, об/мин 1450
Внутренний диаметр штуцера, $мм$:
всасывающего 125
нагнетательного 100

Напор, $м$	Количество камер	Длина насоса, $мм$	Мощность электродвигателя ($квт$) для насоса производительностью, $м^3/час$			Вес насоса без электрооборудования и рамы, $кг$
			30	50	70	
50	2	1090	9	14	20	557
75	3	1185	14	21	29	633
100	4	1280	18	28	37	709
125	5	1375	23	35	46	784
150	6	1470	27	41	55	860
175	7	1565	32	48	64	933
200	8	1660	36	54	73	1012
225	9	1755	41	61	82	1084
250	10	1850	45	67	91	1163

Насосы КСМ-100 и КСМ-150

Производительность, $м^3/мин$ . . . . . 100 и 150
Напор на одно колесо, $м$ 30
Скорость вращения, об/мин 1450
Внутренний диаметр штуцера, $мм$:
всасывающего 200
нагнетательного 150

Напор, $м$	Количество камер	Длина насоса, $мм$	Мощность электродвигателя ($квт$) для насоса производительностью, $м^3/час$		Вес насоса без электрооборудования и рамы, $кг$
			100	150	
60	2	1491	30	45	971
90	3	1606	45	66	1102
120	4	1721	60	87	1234
150	5	1836	75	108	1365
180	6	1951	90	123	1496
210	7	2066	105	150	1666
240	8	2181	118	170	1803
270	9	2296	133	190	1938

ИЗДАНО В СОВЕТСКОМ СОЮЗЕ

ВСЕСОЮЗНОЕ ОБЪЕДИНЕНИЕ
МАШИНОЭКСПОРТ
СССР, МОСКВА
★
ТЕЛЕГРАФНЫЙ АДРЕС
МОСКВА МАШИНОЭКСПОРТ

ARTESISCHE SCHRAUBENPUMPE

ВАН-4

Die artesischen Schraubenpumpen BAH-4 (Bild 1) dienen zum Abpumpen von Wasser aus vertikalen Bohrlöchern mit kleinstem Durchmesser der Futterrohre von 4" und werden bei Trockenlegung vor Schachtbaufeldern und Grundwasserabsenkung bei Tiefgründungen sowie für Trink- und Betriebswasserversorgung angewandt.

Die Pumpe BAH-4 hat folgende Hauptbestandteile: Arbeitsorgan, Druckleitungs- und Saugwerksektionen, die im Bohrloch, Pumpenstützrahmen und Elektromotoren, die sämtlich über Tag, oberhalb der Bohrlochmündung, angeordnet sind.

Die Hauptelemente des Arbeitsorgans sind: Stahlschraube und Gummikupplung sowie Kardanwelle, die zur Übertragung des Drehmomentes von der Transmission auf die Schraube dient.

Das Arbeitsorgan ist mit der Druckleitung verbunden, über die das Wasser zur Bohrlochmündung geliefert wird.

Zur Dämpfung der Schwingungen werden auf der Druckleitung Distanzgummihülsen aufgesetzt.

Für den Antrieb der Pumpe wird ein eigener Elektromotor in vertikaler Ausführung verwendet.

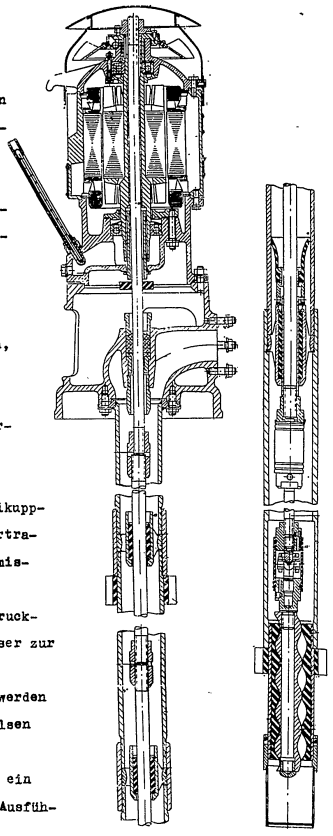
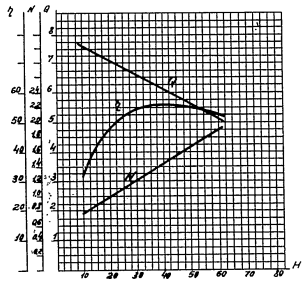


Bild 1

Technische Daten

1. Förderleistung	5 m^3/Std
2. Druckhöhe	bis 60 m W.S.
3. Kleinster Durchmesser der Futterrohre	4"
4. Drehzahl des Elektromotors	1420 U/min
5. Anzahl der Druckleitungs- und Wellensektionen:	
a) bei einer Senkung von 60 m	29
b) bei einer Senkung von 30 m	15
6. Größter Druckrohrdurchmesser	95 mm
7. Gesamtgewicht der Pumpenanlage:	
a) bei einer Senkung von 60 m	1213 kg
b) bei einer Senkung von 30 m	692 kg

Kennlinien der Pumpe BAH-4 (mit einer Druckhöhe von 60 m)



Q - Förderleistung, m/Std
H - Druckhöhe, m W.S.
η - Wirkungsgrad, %
N - Leistung an der Pumpenwelle, kW

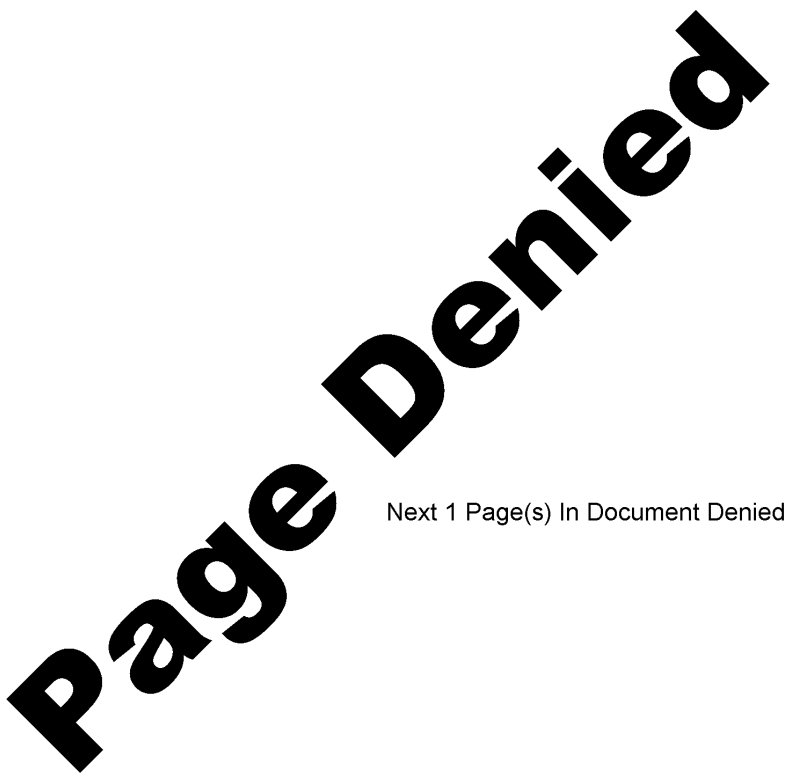
Einsatz der Pumpen

1. Vor der Montage ist das Bohrloch auf seine vertikale Lage zu prüfen. Die Abweichung von der Vertikalen darf 3^0 nicht übersteigen.
2. Das Saugwerk der Pumpe ist um 1,5-2 m tiefer als der dynamische Wasserspiegel des Borhloches anzuordnen.
3. Vor Inbetriebsetzung der Pumpe sind die Gummilagerbüchsen der Pumpe mit Wasser zu füllen.
4. Liefert die Pumpe ein zu schlammiges Wasser mit hohem Sand- oder Tongehalt, so ist sie zwecks Filtrierung des Pumpwassers nicht abzustellen.

Lieferungsumfang

1. Pumpe, zusammengebaut mit Elektromotor. 2. Ein Satz Ersatzteile.
3. Montagewerkzeuge.

50X1-HUM



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